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SURGICAL MORTALITY OF THE SOUTHWEST

Presidential Address

by

DAVID M. DAVIS, M. D.

(On elevation to the presidency of the Medical and Surgical Association of the Southwest, Nov. 22 1934.)

I wish to express to you my appreciation of the honor you have done me in electing me to the presidency of this association, though a comparative newcomer to the Southwest. The Medical and Surgical Association of the Southwest represents better than any other the interests of the profession in this large area composed of different states, but unified by similarities in geographical features, climate, and resources. We have to deal with scattered populations, separated by long distances; we miss the stimulation of large urban centers of medical education and research. As exemplified by the splendid program presented at this meeting, the association can be of tremendous value in nullifying these handicaps by drawing us together at intervals and by providing us contacts with the best of medical teaching from elsewhere as well as from our own ranks.

At this meeting our economic present and future have been fully discussed. I do not know what the future will bring forth, but I do not wish to sound any note of alarm or pessimism. In some directions the way looks dark and threatening, but I cannot believe that the American people will ever be permanently satisfied with any system which makes the physician a low-salaried drudge, and deprives him of incentive to excel in his profession. Unless and until state medicine is foisted upon this country, we physicians will have to stand upon our own capabilities, and know the pleasuure and satisfaction of constantly improving ourselves. This is, indeed, the text of my brief discourse; I believe it may be peculiarly appropriate at this time when many of us may be running the danger of concentrating our minds too exclusively on the necessity of repelling the attacks being made upon us as a profession.

The best way that anyone of us can advertise himself is to be a good doctor, and to become constantly a better doctor. In so doing he will not only serve his own interests, but in addition, those of his patients and, those of the medical profession as a whole. Cultists fatten upon those who have, or think they have, some reason for dissatisfaction with physicians. The physician who falls into a rut, who relies on the rule of thumb learned in medical school years ago, or who rides a hobby, may easily become an actual liability to his confreres. The physician who uses his head, keeps up with the procession, and does first class work not only prospers himself, but brings honor to his brother practitioners as well. While this fact can be illustrated in any branch of medicine, I hope I may be pardoned for drawing an example from my own special field of urology.

Thirty years ago operations upon the prostate caused a mortality of from 30 to 50 per cent and the public had a justifiable fear of them. A comparatively small number of pioneers developed the operation, discovered the principles of preoperative and post operative care, improved the results vastly, and eventually reduced the mortality to two to three per cent. This was, of course, to the advantage of the pioneers themselves; but I ask you to consider, the change in the popular attitude which has taken place and, the hundreds of urologists scattered everywhere in the country who can now successfully devote themselves to prostatic surgery. All this flows directly from the good work of the pioneers. In almost any community there are extensive

fields of work waiting to be opened up by some one with sufficient skill and ability.

It is traditional for doctors to share their knowledge; the prime function of this society is to aid in this sharing and to make it general in this region. It has performed this function well in the past, and I believe will continue to do so in increasing measure in the future.

As I stated a moment ago, we live in a region having a characteristic climate, and this climate has been shown to be very beneficial for certain diseases. It seems possible to me that this climate may have other advantages not yet fully envisaged. In support of this idea I would like to present briefly my own experience. Since coming to Phoenix four years ago I have performed several hundred urological operations with one post-operative death. This patient was a long-time sufferer with bilateral renal tuberculosis. Death occurred two days after suprapubic bladder drainage from adrenal insufficiency—confirmed at autopsy. I have performed several hundred other minor urological procedures with but one death. This patient was 96, and had prostatic obstruction and urethral stricture. Death followed dilatation of the urethra due to ascending renal infection. In other parts of the country before coming to the Southwest my post-operative mortality was, similar to that of others and, certainly greater than this. Most noteworthy is the fact that post-operative respiratory infections have practically disappeared from my records. If my experience can be borne out by others, it would be an extremely important thing for the medical future of the Southwest. I would like to constitute myself a clearing-house for the necessary data, and earnestly request surgeons to consult their records and forward to me any statistics bearing on this matter. If a sufficient body of statistics should confirm my impression, they ought to be made known in no uncertain terms to the entire medical profession.

In conclusion, allow me to state again that I feel deeply honored to occupy this position. I feel sure that the coming year will be a prosperous one for the Association. If and when the Association comes to Phoenix it will be difficult for us to excel the high standard of program and entertainment set in El Paso, but we shall nevertheless try to do so, and I hope that it will be soon, and that everyone of you may be present at that time.

MEDICAL ECONOMICS

Presidential Address—January 9, 1935
by
DR. H. E. RODGERS, President
Bernalillo County Medical Society
Albuquerque, New Mexico

I wish to say a few words concerning the rapidly shifting trends in our present Medical financial situation. We, members of the Medical profession, stand abreast with the financial leaders of 1935, asking: To the left, or to the right? Undoubtedly, to the left.

In the last year, we have seen approximately 15 per cent of our country's population become socialized in so far as the Siamese twins, Medicine and Food, are concerned.

This is not a theory, but a fact. Does the future hold a further turn to the left, or a shifting back to the right? And, how will it concern us? What can, and what should we do?

Should we profit from the past, and attempt to re-aline our forces in a concrete, practical manner, or attempt to mend the situation by vociferous non-sensical mouthings, and ethereal chauvinistic rantings; or should we follow the ultra-conservative Fishbein, and tilt at the windmills of State Medicine? It is for us to decide.

I believe it appropriate to insert here a few items indicating the latest trends toward State Medicine that appeared in the last few months. I culled this item from the weekly magazine, Time, of December 31. "Last week a committee of the Bronx County Medical Society begged New York State for a complete socialization of Medicine, stating that a large number of their colleagues were going hungry, and vacating their offices due to the fact that their erstwhile patients, no longer being able to afford private physicians, were being treated by the free clinics, and hospitals. The Medical Society estimated that the State medical bill runs near 110 millions of dollars yearly. It has also stated that if these figures were raised to 165 millions per annum, the State could provide the treatments, the doctors be paid, and private practice be a thing of the past."

I believe the above figures and statements to be highly debatable, but the thing that strikes me, is the fact that one of our largest Medical Societies in our largest city is publicly begging for financial relief. This is not just a straw in the wind; it is a whole sheaf.

From the Albuquerque Tribune, January 3, in the weekly column edited by our State Health Officer, Dr. J. R. Earp, read by thousands of readers, he discusses Impetigo Contagiosa, and ends his article by advising his readers who are suffering from this, or similar skin diseases to see not their private physician, but their county health officer or nurse. Another straw! a total disregard of the good old stand-by—the General Practitioner!

Again, our chief apostle of the New Deal, President Roosevelt, publicly stated last month that he was in favor of medical insurance.

Congress, in this session, will undoubtedly pass some form of Old Age Pension Bill. Undoubtedly, this will include state medical care.

In my opinion, whether we are in favor, or not, of the end of private practice, it is immaterial—it is on its way. In fact, if one will analyze the situation today, he will readily see that State Medicine is here—possibly, only as an infant in swaddling clothes but mark you! he will grow.

If we must bow to the inevitable, we must bow with our eyes open.

My one and only suggestion: Unionization. Call it any name you wish, but let it be: Unionization. As I recall, there is an old proverb which states: "The Lord helps him who helps himself."

Let us not sit on a high throne, and mumble-jumble about dignity, but rather go out, and meet the facts face to face.

As I near the end, I believe that as a starter —something concrete to help us formulate our immediate plans—an analysis of the present F. E. R. A. set up is appropriate. Is it satisfactory to the physician? To the patient? Do we need a revision of our temporary contracts, or are we satisfied to allow things to drift as they will? Do we believe this a temporary form of state medicine or a permanent one?

Answers to the above will give us something, at least, on which to start.

In closing this short paper, let me reiterate that I have no immediate solution for this vast controversial subject, and neither do I believe that any individual, or group of individuals has; but I do believe that we should adjust ourselves to changing conditions, making our unified organizations pliable, so that they can be bent from day to day to meet the rapidly shifting conditions.

THE TREATMENT OF PNEUMONIA

FRANK B. KELLY, M. D.
Chicago, Illinois.

(Read before the New Mexico Medical Society, at its 52nd Annual Meeting, at Las Vegas, N. M., July 19-21, 1934.)

The fatality from lobar pneumonia maintains a fairly constant rate as by records of hundreds of patients over a period of years.[1] In Cook County Hospital, Chicago, in 1901, 36 per cent of 338 pneumonia patients died. Between 1911 and 1923, with an average of 650 cases annually, there was a fatality of 36 per cent for the entire period. In 10 of these years the rate was between 34.6 and 38.8 per cent. There are good and bad pneumonia years. Two good years were 1921, with a case fatality of 26.6 per cent. and 1931, when it was 24.2 per cent. Two bad years were 1918, when the case fatality was 41.4 per cent, and the present year in which it has been 41 per cent.

Surveys reveal a similar consistency of fatality of pneumonia where cases are grouped according to age, previous health, habits, and the economic circumstances of the patients studied. Presence or absence of bacteremia as an influence on the course of the disease is not an epidemiological factor, and will be mentioned later. The fatality will probably continue to be the same until a specific method or drug is found, which is capable of ready and easy use in the infection.

Brought forward during the past generation are serum therapy, vaccines, diathermy application, the use of artificial pneumothorax, ethyl hydrocuprein, oxygen therapy, and glucose injections. These are now in use, alone or in varying combinations. dependent on the facilities, training, and enthusiasm of the attendant physicians. The use of oxygen and glu-

cose may more properly be considered as part of the symptomatic treatment of the disease.

In the specific treatment of pneumonia the introduction of serum, containing protective antibodies into the patient's blood stream rests on a well established, scientific basis.

Since 1897 when Washburn immunized a horse with pneumococci and used the serum in the treatment of pneumonia in man for the frist time, much progress has been made. Different types of pneumococci have been recog nized, each having specific antibodies. The antibodies in the immune sera have been concentrated and refined. Methods have been developed for the rapid typing and recognition of the pneumococcus causing the infection in any given case. Methods of safety have been learned for the clinical application of the sera. Among those who have contributed to this valuable work are Cole and his associates[3], Felton[2], Cecil[4], and Sabin[1].

The antipneumococcic sera owe their efffect to their content of specific bactericidal substances, or protective bodies, which prepare the organism for phagocytosis. These immune bodies are present to some extent in most patients with pneumonia, varying greatly in amount, but not appearing in great abundance until the fifth day of the disease or until the crisis has occurred. They may be neutralized by a so-called "S" substance[6] which the pneumococcus manufactures to protect itself. The "S" substance is rigidly specific for each type of the organism. Bacteremia may develop if the patient's blood lacks sufficient bactericidal substances, in which case the prognosis is much more grave, the mortality being as high as 78.3 per cent in one group of cases reported by Baldwin and Cecil[7]. Pneumococci are rarely present with homologous protective bodies in the blood of the patient. Early administration of a sufficient amount of the homologous protective substance in the form of immune serum increases the concentration of these substances in the patient's blood to a degree that may prevent a pneumococcus septicemia. The most effective results are achieved when such therapy is administered in the first 72 hours of the disease. It is said this may be due to either plugging of the capillaries in the area occupied by the pneumonic process, or to their closure by the extensive exudate present after the third day. The clinical changes that follow the use of the serum in Type I infections are rapid lowering of the temperature, almost simulating the drop in a natural crisis; marked amelioration of toxic symptoms within 24 hours; and disappearance of pneumococci from the blood stream excepting cases of marked sepsis with hundreds of organisms in each cubic centimeter of blood. There is also reported a definite decrease in the frequency of complications and fatal terminations.

Reactions may take place as with any serum injections, but they are relatively uncommon, occurring in about 15 per cent. They are thermal in nature, mild chills occurring shortly after the serum is introduced. Allergic phenomena are seen occasionally with new sera or with increased dosage. In about four per cent, three to five minutes after the injections, the face becomes flushed, the respiratory rate increases, dyspnea, cyanosis, precordial pain, and urticarial lesions develop. In about 20 per cent serum sickness occurs several days after the serum is administered.

If facilities are available for accurate typing, and serum, particularly Felton's Type I, is obtainable, specific therapy offers a valuable means of increasing the patient's chances for recovery. Sabin's rapid method of typing is carried out by the injection of one cc. of fresh sputum intraperitoneally in a white mouse, followed in three to four hours by a capillary puncture of the peritoneum and removal of a few drops of exudate. A glass slide is marked off into four divisions. A drop of exudate is put on each division. A loopful of a 1-to-10 dilution of diagnostic Type I, II, and III sera are mixed separately with each drop of exudate. Normal saline solution is mixed with the fourth drop of exudate as a control. These mixtures are smeared out and allowed to dry rapidly, then stained one-half minute with fuchsin made up of 10 cc. of saturated alcoholic solution of basic fuchsin and 90 cc. of water. The slide is then washed in running water and examined under a microscope. If clumping of organisms is present in any one of the serum mixtures, the type is thereby indicated. Failure of agglutination of pneumococci with the three type sera indicates the presence of a Type IV organism.

The patient is given an intradermal test with 0.02 cc. of a one to 10 dilution of normal horse

serum. If no reaction occurs, five cc. of the concentrated therapeutic serum are injected intravenously. If it is well tolerated 15 to 20 cc. are given intravenously, one to two hours later, and repeated in three to four hours. Altogether 75 to 100 cc. are injected in 24 hours. On the following day the treatment is dependent on the patient's condition. If the temperature, pulse, and respirations are decreased, only two to three injections, each of 20 cc. are given. If the findings are unchanged or worse, five injections of 20 cc. each are given. The third day's program is a repetition of the second day. It is not likely that after this period more injections will be necessary or effective.

A modification of this program is suggested by Parsons and Sutliffe[4], who inject 25 cc. of serum the first four hours, and repeat injections only as the homologous agglutinins are not demonstrable in the patient's blood. Using as an antigen a saline suspension of pneumococci made from saline washed organisms of an eight hour culture of pneumococci of maximum mouse virulence, they mix one drop each of the patient's blood and this suspension on a glass slide, spread the mixture thin, dry it, and stain with a 0.1 per cent aqueous safranin to which a few drops of 10 per cent acetic acid has been added. They examine the stained slide under a microscope for agglutination. By this means they find the average amount of serum required for treatment is slightly more than half the amount empirically used.

Cecil has reported the mortality in Type I pneumonia treated by specific serum 20.1 per cent with the control 31.2 per cent. When the serum was first administered within 72 hours of the onset of the disease, the mortality was 11.7 per cent against 26.8 per cent for the controls. In Type II pneumonia the mortality was 40.5 per cent in the treated cases, 45.8 per cent in the controls, 14.3 per cent when the serum was administered to 20 patients within the first three days, and 65 per cent in the 20 control cases.

In Type II cases treated with homologous serum temperature drop is rare, although it is definitely lowered and the toxemia is decreased. Bacteremia is twice as frequent in Type II cases as in Type I, and has a tendency to occur at any stage of the disease.

Type III pneumococcus has been very resistant to all forms of serum treatment. This has been attributed to its large capsule. Avery and Dubois have isolated an enzyme produced by a bacterium from a peat swamp. This enzyme can dissolve the capsule of the Type III pneumococcus both in a test tube and in the animal body, and may have clinical application.

Of the Type IV pneumococci, which have been subdivided into over 30 sub-groups, one called Type VII[7], and another Type VIII[8], have been reported effectively treated with homologous serum in a small number of cases.

Since about 50 per cent of the cases of lobar pneumonia are due to either Types I or II pneumococci, there has been developed a very effective form of specific treatment which can materially reduce the mortality of the disease if it is applied early in the course of the infection.

When proper facilities are unavailable for specific serum therapy, and in the cases due to the types of the pneumococci for which no homologous serum has been developed other forms of specific therapy have been tried.

Vaccine prepared from the cultures of the pneumococcus, and autolyzed pneumococci have been used for their prophylactic effect, and have also been given therapeutically. Those vaccines which are kept up to a high virulence and sterilized by formalin or tricresol have given the best results[9]. They apparently stimulate a greater production of antibodies by the reticulo-endothelial system so that these protective bodies are present in about four times the amount found in the uninoculated controls, although not appearing any earlier in the blood stream. Lambert[9] reports a mortality of 24 per cent in 474 vaccinated cases at the Bellevue Hospital from 1923 to 1931, compared with a death rate of 44 per cent in 482 controls. He used a mixed vaccine containing in each cc. 100 million of a mixture of the different types of pneumococci, 100 million streptococci, and 200 million each of influenza bacilli, micrococcus catarrhalis, staphyllococcus aureus and albus. He gave one to two cc. of the vaccine every six hours while the fever lasted, and one to two doses at 12 hour intervals when the temperature dropped to 99°, injecting them in the gluteus medius or deltoid muscles.

Their advantage lie in the lack of necessity

of typing, their ease of administration, and infrequency and mildness of reactions. The mixture of other organisms might vaccinate the patient against secondary infections such as bronchitis and empyema.

Diathermy was first used in the treatment of sailors of the United States fleet by Stewart[11] in 1924. He gave two treatments daily during the febrile period, and one daily during resolution, maintaining the current usually 20 to 30 minutes each treatment, reducing it slowly to zero in two to three minutes. In the small series there was a mortality of 20 per cent in the treated cases, and 43 per cent in the controls. Subsequent to each treatment there is a sense of comfort to the patient, a removal of pain, temporary disappearance of cyanosis, and a period of slow. deep. regular breathing.

Artificial pneumothorax has been used in Europe since 1921 in the treatment of pneumonia,[12,13] and recently has been tried in this country. The average amount of air injected is 400 cc. with refill necessary 12 to 18 hours after the first injection. It results in separation of inflamed pleural surfaces, relieving pain and allowing easier respiration. It is claimed that the infected lung is put at rest, and the passage of toxins into general circulation is decreased. Profuse perspiration may occur with the withdrawal of the needle. Cyanosis and dyspnea are relieved in 15 to 20 minutes, and the temperature falls in two to three hours. Its general effect seems to parallel that of a crisis during the period the air is in the pleural cavity. and with adequate refills it is claimed the pathological process is ended in 48 hours, and a normal convalescence follows.

Two possible dangers are those of acute cardiac collapse and a secondary empyema.

Ethylhydrocuprein (Optochin), a quinine derivative having a bactericidal effect on pneumococci both in the test tube and in the animal body, was discovered in 1911 by Morgenroth and Levy.[14] It has not been used extensively because the pneumococci became resistant aganist it in a few days, optic nerve injuries have resulted from its use. and there has been a lack of beneficial results when it was tried in a large number of cases.[15]

Symptomatic treatment of the disease is important both for the physical comfort of the patient and to meet his general needs. Whether at home or in a hospital, he should be in a well-ventilated room, preferably on the sunny side and in a quiet part of the building. If climate and season permit, the temperature of the room should be about 65°, so he may have the stimulating effect of the cool air. Properly placed screens can protect him from draughts, and hot water bottles, if necessary may be used to keep his extremities warm.

In such an atmosphere he should be clad in light-weight woolen garments affording ready access for examination of the chest. The bed coverings should afford protection against cold, but light enough not to be burdensome. Capable nursing care should spare him every possible exertion; examinations should be made with the least disturbance to the patient. Changing his position from his back to either side at intervals lessens the possibility of hypostasis and massive collapse. Visitors, and business or family cares and worries, should be kept at a minimum.

Tepid sponges, unless they fatigue him, should be given for cleansing purposes, to add to his comfort, and to increase vascular tone. They should be given with the room warm, wetting and drying one part of the body before exposing the next.

Daily evacuation of the bowel may require the assistance of a small enema of plain water, or mild laxative. Failure of stool passage for a week is said to lead to no discomfort.

About eight ounces of fluid per hour, in small amounts, should be given to replace that lost by the excessive sweating and to maintain active kidney function. It may consist of water, lemonade, orange, grape, grapefruit, or pineapple juices, albumen water, tea, coffee, or cocoa. Rectal drip or retention, or hypodermoclysis may be required. Cardiac weakness may necessitate caution in the rate and amount of the intake.

The diet is not of great concern because the duration of the illness is usually short. It is desirable that nutrition and strength be maintained by food, readily assimilated, such as milk, cereals, broths, purees, custards, eggs, milk toast, and crackers. Carbohydrates are readily absorbed and are protein sparing, but may have to be reduced in the presence of tympanites. Nausea may require a temporary restriction of the amount of nourishment; al-

bumen water may be retained when nothing else will.

If the stomach is irritable 25 per cent glucose may be given intravenously four to six times in 24 hours, 200 cc. being given at a time, taking one-half hour for the injection. This furnishes 800 to 1200 calories daily. Clinical signs of improvement in the circulation may also be observed after the intravenous injection indicating a direct effect on the heart muscle.

Chest pain may be controlled by use of an icebag, hot water bag, electric pad, or flaxseed poultice. With the pain referred to the anterior chest wall the site of irritation is frequently near the nerve roots where the nerve is exposed for a short distance on the inner side of the chest wall. Acetyl salicylic acid gr. x. (0.6 gram), codein gr. ¼ (0.016 gram), and rarely morphine gr. ⅛ (0.008 gram) may be required so sleep may be obtained. Morphine should be used with caution, particularly after the third day, as it may depress the respiratory center, and is believed to paralyze the action of the "sympathetic adrenal" system.[9]

Cough, if dry and purposeless, may be controlled with codeine gr. ¼ to ½ (0.016-0.03 gm.) every four hours, or gr. 1/10 (0.006 gram) every 10 to 15 minutes for several doses. Steam inhalation of the compound tincture of benzoin may be helpful. With mucus present in the bronchial tubes, an expectorant should be given, such as ammonium chloride gr. five to 10 (0.3 to 0.6 gm.) potassium iodide, gr. one (0.06 gram.) wine of antimony or wine ipecac each minims three (0.2 cc.).

Sleeplessness is sometimes a problem, and any pneumonia patient may at times be delirious, when he may attempt to get out of bed or otherwise unnecessarily exert himself. Small doses of bromides is the safest sedative. Trional gr. 10 (0.6 gm.) in warm milk or paraldehyde drams two (8.0 cc.) in orange juice may be effective. Phenobarbital should be used with caution as it may cause agranulocytosis in patients. Chloral produces necrosis in the liver.

Support of the heart is always an important problem in lobar pneumonia. Digitalis is the drug most relied on to maintain the circulation. Electrocardiographic tracings demonstrate that it acts on the heart in the febrile state of pneumonia, as shown by prolongations of the P-R & R-T intervals, and changes in the "T" wave. Opinion varies as to its routine use in pneumonia with the objective of having the heart partially digitalized with the hope of more prompt response should evidence of cardiac weakness develop. Carefully controlled observations indicate such routine use does not contribute to the welfare of the patient, and may be harmful.[4] It is better to be guided in each case by the condition of the heart. In cases of pre-existing cardiac disturbance, such auricular fibrillation, or marked valvular disease, with associated muscular changes, digitalis should be started immediately. If signs of cardiac weakness develop during the infection, stimulation is desirable. Beginning cyanosis of the ears, lips, and fingers, irregularities in the rate and quality of the radial pulse, increase of the right heart dullness, faintness of the heart sounds, shortening of the long pause, decrease in the pulmonary second sound, and falling systolic blood pressure are significant indications that the heart muscle is weakening.

The official tincture of digitalis or the powdered leaf are satisfactory preparations for securing the necessary stimulation. The dosage varies with the urgency of medication; 1¼ drams (five cc.) of the tincture, or 1½ grains (0.1 gm.) of the powdered leaf, given every eight hours for three doses will usually digitalize the heart and the effect may be maintained by 15 minims (1.5 cc.) of the tincture, or 1½ grains (0.1 gram) of the powdered leaf, three times daily. Smaller initial doses proportionately increase the interval before digitalization occurs, the maintenance dose alone securing the effect in a week. For extreme urgency several preparations in ampules are available for intravenous or intramuscular injections. They may also be required if there is difficulty in oral administration. With pulmonary edema, atropine (1/40 grain, 0.0012 gm) may be of assistance, if given hypodermically. Venesection, rarely employed at present, with the removal of 300 to 500 cc. of blood, may be a life-saving measure in either pulmonary edema or marked stasis with right heart dilation. Adrenalin is sometimes an excellent drug to use, for example with lowered blood pressure, dilatation of the peripheral

capillaries, and weak heart muscle, or in cases of sudden cardiac collapse. The dosage is five to 15 minims, repeated at intervals of 15 minutes to an hour for several doses.

Blood gas analysis of the arterial blood of patients with pneumonic consolidation have shown markedly diminished oxygen content in cases, occasionally as severe as that which experimentally will cause cyanosis, rapid pulse, dyspnea, nausea, vomiting and delirium.[17] When oxygen has been administered at a saturation of 40 to 60 per cent, the oxygen content of the blood is raised to the normal value and the symptoms are relieved. The oxygen room or chamber is the most satisfactory method of giving the gas; the tent works well if it is not too small. The nasal catheter can give good results if the end of the catheter is passed down below the level of the tongue and the flow of oxygen be regulated so that two liters per minute are given.

SUMMARY:

There is no tendency toward a natural decline in the case fatality rate in lobar pneumonia. Type specific sera are available which, if used early in the course of the disease, can materially reduce the mortality in perhaps 50 per cent of the cases. There are other forms of specific treatment, apparently equally applicable to infections from any of the types of the pneumococci. The general care of the patient may have an important bearing on the welfare of the patient.

While there is no known treatment by drugs which will routinely cure pneumonia, there are available remedies which properly used may aid in re-establishment of functions which have been interfered with by the disease, and if judiciously used may enable a patient to go through a critical period to a favorable outcome.

Anxiety to omit nothing which may contribute to recovery may lead to over treatment. One of the most important points in the treatment of the pneumonia patient is the intelligent care given him by the physician and nurse.

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DISCUSSION

DR. O. I. NESBITT, Espanola, N. M.: There is one question I should like to ask Dr. Kelly and that is in regard to the use of cathartics in these cases.

DR. FRANK H. AUSTIN, Carlsbad, N. M.: The cost of the serum for treatment of pneumonia is prohibitive in many instances. Using 100 c.c. of serum the first day, 50 c.c. the second day, etc. is entirely too expensive and out of reach of the pocket-book of the average patient. Perhaps Dr. Kelly can tell us of some way of lowering the cost.

DR. R. O. BROWN, Santa Fe, N. M.: I was an interne at the Cook County Hospital at one time and am wondering if methods of treatment have changed. We were not able to get expensive drugs such as pneumonia sera. In regard to the mortality rate, I am wondering if the records of the private hospitals might not show better results than those of the County Hospitals. After all a County Hospital is a charity hospital and cases are brought there of all types, mostly out of the classes less well off intellectually and financially. Cowboys who have been out on the range for years and then come to the city for a vacation, get on a spree, are picked up on the streets after being exposed to all kinds of weather and taken to the hospital with pneumonia are bad risks and so are the same type of patients more often found in cities. In private hospitals, where there is a higher class of patients, probably the mortality rates do not show such a high percentage.

DR. F. D. VICKERS, Deming, N. M.: In lobar pneumonia we sometimes get very definite results from large doses of cold vaccine. Probably a protein reaction—which greatly modifies the severity of the pneumonia. I wonder if the serum treatment is often more than this.

DR. KELLY (closing): For the most part we use a very mild laxative such as mineral oil or milk of magnesia. We do not give saline cathartics.

As far as the cost of serums is concerned, it is true they are high. Most of our work was done with serum which was given us. At the present time it is being distributed free of charge in Massachusetts and in New York City. They are not being used in great quantity. There are patients who can well afford to pay the extra cost.

As to the mortality rate, in any given group or type of case, the rate will stay about the same over a number of years. If you take a single year, groups of cases under the same kind of care may vary in mortality rate. One year we had approximately one hundred cases in one ward with a mortality of 25 per cent, while in another ward there was a mortality of 40 per cent, with exactly the same kind of care in both wards. Why the difference I do not know. We tried to standardize the case fatality, but could not find any cause for the variation. Taken over a long period of time the rates remain about the same. The Massachusetts General Hospital checked back for over a hundred years and each ten year group ran about 31 per cent mortality. At the private hospitals there are fewer cases and it is difficult to draw conclusions from them. Although the mortality does not seem so high, perhaps it is due to their greater use of oxygen.

Vaccines have not been used to any great extent. They seem to give very satisfactory results according to some investigators, especially if they are made of an organism which has been kept at a very high virulence. I should like to see more use of controls when vaccines are used.

A REVIEW OF 268 APPENDECTOMIES

S. H. NEWMAN, M. D.
El Paso, Texas

FOREWORD

These 268 cases comprise the entire number of acute appendicitis cases operated on in the City-County Hospital for the seven-year period from 1926 to 1932, inclusive. Further back than this, the records do not extend. They do not include fifty-nine of the operated cases for chronic appendicitis, nor do they include cases where appendicitis was found to be secondary to some other pathology.

Something like 600 of the records were studied and it was with a great deal of care that these 268 were selected as representing all the acute primary cases operated upon. Most of them were verified by the pathologist. Probably forty or fifty other acute cases that were not operated upon, are not included, for the reason that in many the diagnosis was not proved and in others the outcome was unascertainable—several leaving the hospital during the attack.

Much credit is due Miss Gannon, historian at the hospital, for her care and patience in obtaining the records and re-filing them afterwards. Also, Mr. Alex Powell, statistician at the City-County Health Deparment, is deserving a note of appreciation for furnishing the figures for the city at large from which Table 11 was compiled.

It is recognized that, in a small series like this, the figures arrived at are by no means a true index of actual conditions and it is not with that intention that this paper is being presented. Rather, it is with the hope that it may serve to stimulate similar efforts in our other hospitals, to the end that we may eventually have sufficient data from which a complete survey may be made, which would then show actual conditions as they exist here in El Paso.

"Appendicitis accounts for a large percentage of our surgical mortality. According to Wilkie, of Edinburgh, the death rate from acute appendicular disease is as high today as it was twenty years ago. This is true despite extended hospital facilities, improved means of transportation, greater appreciation by the public of the danger involved, and increase of capable surgeons. Lowe, in reviewing the history of appendicitis in Missouri, found that the number of deaths from this cause, only 531 in 1924, gradually rose to 577 in 1929. The average mortality rate is higher than 10 per cent in the United States. In some sections the rate is as high as 21 per cent. In Lowe's series, 38 per cent of all cases had been given castor oil, salts, or pills, by parents or physicians, before entering the hospital. In the hands of the best surgeons, the operative mortality rate for appendicitis runs from 1.5 per cent to 4. per cent.'"

By referring to Table 11, we find that in our

own city the death rate from this disease has steadily increased, jumping from 21.3 per 100,000 in 1930 to 24.7 in 1931, and 34.5 in 1932. This, according to Bower[3], exceeds by far the mortality rate for the twenty-five largest cities in the United States—Philadelphia being the lowest, with a rate of 14.4 and Kansas City, Mo., the highest, with a rate of 26.4 per 100,000 population.

Of all the acute diseases producing death in 1932, appendicitis stands fourth on the list here in El Paso, being surpassed only by pneumonia, with 140 deaths; diarrhea and other forms of enteritis, with 108; and influenza, with 91.

All of this is rather discouraging in view of our advances and lowered mortality rates in other diseases and would seem to point to some fundamental weakness in our approach of the subject. Undoubtedly a careful survey by each community of the cases in aggregate would at least be interesting and possibly enlightening. Education of the public is far from complete and that of the profession itself can be improved upon.

The recovery from acute appendicitis does not by any means depend altogether on surgical technic. It has often been said that a patient's prognosis is sealed up within him on leaving the operating table, intimating that the after-care has but little bearing on the outcome. Undoubtedly this, in great part, is true. But it might also be said, with even greater significance, that his fate has already been determined by the time he is first put on the operating table.

Only a few factors enter into the equation of life and death in these cases and probably the least important of these is surgical technic. If this latter is carried out with ordinary skill and judgment and with not too much meddlesome bungling, it is all that is required. All the other factors have already occurred by the time the patient has been put on the operating table. The principal ones of these, of course, and ones that cannot be controlled, are the character of the infecting organism and the resistance of the patient. Where a streptococcic infection is present, the patient is generally doomed, no matter what. Other factors, though, and of greater importance than this for the reason that they can be controlled, are the time element and purgation, and it is in these two that the public and the profession must be educated before we can expect a lowered mortality rate.

The classical picture of appendicitis with its sudden onset of abdominal pain, often in the epigastrium, later localized in the lower right quadrant, accompanied with vomiting, constipation, fever, muscular rigidity, and leukocytosis, is as familiar to the lay public as to the medical profession. It does not ordinarily require much urging on the part of the doctor to obtain consent to an operation, for the public pretty well realizes that appendicitis means operation. But usually, by the time all these symptoms and signs have developed, much valuable time has been lost and the patient's chances of recovery are consideraby lessened. It is like waiting for the twenty-four-hour culture report to give antitoxin in diphtheria. And, furthermore, the classical picture may never develop—death supervening before.

The only two signs that can be relied upon in making an early diagnosis are pain on deep pressure over the region of the appendix, and, possibly, muscular spasm. The patient may locate the pain in the epigastrium, the right flank, the umbilical region, or even in the left quadrant, but it can always be elicited by pressing deeply with the finger over the appendix. Similarly, whenever there is inflammation there, pressure will produce a definite reflex contraction of the muscles and this spasm, although it may be slight, can usually be detected by trained fingers, if the patient's attention is distracted while attempting it.

When these two signs are present, the only thing to do is to operate and operate at once, regardless of whether the patient has fever or vomiting or constipation, or what his blood count is. And that is where the rub comes. For it is hard to make the patient and the family realize the seriousness of the condition without more untoward signs. Also, often the attending physician refuses to stand adamant on the urgings of his better judgment and allows himself to be persuaded to await further developments. As well wait for pallor and sighing respirations before attempting to stop a hemorrhage.

Undoubtedly, many cases of acute appendicitis get well without operation—how many we do not know. But we do know that surgery in

these cases has saved many a life and that, when it is instituted in the first six to twelve hours, the mortality is nil, and that, every hour after this, the mortality creeps up.

The ill effects of purgation in these cases are too well understood by us to be more than mentioned. The public, though, still needs considerable teaching along this line.

TABLE No. 1

YEAR	1926	1927	1928	1929	1930	1931	1932	Total
All cases operated	14	18	19	45	52	58	62	268
Total hospital admissions	1449	1387	1656	2031	2422	2014	2248	13207
Percentage of all admissions	0.96	1.30	1.14	2.21	2.14	2.88	2.76	203
Nationality	A 2	A 4	A 2	A 7	A 13	A 11	A 9	A 48
	M10	M14	M17	M38	M39	M45	M53	M216
	C 2					C 2	C 0	C 4
Sex	M 6	M11	M 8	M26	M23	M24	M29	M127
	F 3	F 5	F 2	F 5	F 29	F 34	F 33	F 141
Seasonal	F 8	F 7	F11	F19	Sp.16	Sp.15	Sp.20	Sp.79-29.5%
	Sp. 3	Sp. 3	Sp. 6	Sp.16	Sm21	Sm18	Sm12	Sm.84-31.3%
	Sm.6	Sm.7	Sm.6	Sm.14	F 7	F 10	F 15	F. 47-17.5%
	W 2	W 3	W 5	W10	W 8	W15	W15	W58-21.6%
Number operators	5	5	7	6	7	9	7	13
Unruptured	M 5	M 7	M 6	M15	M12	M17	M14	M 76
	F 5	F 3	F 8	F17	F 23	F 27	F 25	F 108
Ruptured	M 1	M 4	M 2	M11	M11	M 7	M15	M 51
	F 3	F 4	F 3	F 2	F 6	F 7	F 3	F 33
Age, unruptured Av.	21.7	23.2	23.4	22.1	22.7	24.6	19.9	A22.4
H	29	33	43	41	50	54	54	H 54
L	12	16	1¼	7	49	6	6	L 1¼
Age, ruptured Av.	24.7	25.5	21.6	20	29.4	20.5	19	A22.5
H	45	55	42	42	71	43	41	H 71
L	9	4	13	6	6	6	6	L 4
No Cases Purgation Unrpt.	0	1	2	2	2	5	6	Unr. 18
Rupt.	0	4	0	0	6	2	7	Rup. 19
Days Sick Before Av.	3.6	4.2	5	3	2.3	2	2.4	A 2.5
Admission H	14	14	30	14	10	4	9	H 30
Unrupt. case L.	1	0.5	1 hr	2½ hr.	7hr.	0.5hr.	4hr.	L ½hr.
Days Sick Before Av	7	7.2	9	2.9	3.4	2.8	3.5	A 4.1
Admission H.	14	29	28	5	12	2	12	H 29
Rupt. case L.	1	1	3	7.hr.	16hr.	1	11hr.	L 7.5 hr.
Stay in hospital Average	18.7	14.6	5.7	17.1	11	10.9	23	A 14.8
before operation—Hours H.	96	72	24	66	80	42	192	H 192
Unruptured L.	0.5	2	1	25 Min.	1	1	0.5	L 0.5
Stay in hospital Average	54	62.7	7	4.8	4.7	11.8	6.7	A 14.4
before operation—Hours H.	96	168	19	20	18	83	48	H 168
Ruptured	1	2	2	1	1.5	2	1	L 1
Stay in hospital Average	14.3	18.4	16.4	11.9	11.6	10.5	10.5	A 12
after operation—Days H.	31	26	54	35	30	40	19	H 54
Ruptured L.	2	9	7	7	5	3	6	L 3
Stay in hospital Average	19.5	25	29.5	31.1	38	21.2	18	A 24.8
after operation—Days H.	22	50	31	65	80	42	47	H 80
Unruptured L.	12	19	28	10	9	8	11	L 8
Temperature before Average	100	99.4	99.8	100.1	99.2	99.2	99.8	A 99.6
operation— H	102	100.4	104	103	103	102	103	H 104
Unruptured	97.3	98.2	96.4	98.2	97.3	97.8	98	L 96.4
Temperature before Average	100	100.5	101.3	100.7	99.8	100.3	100.5	A 100.4
operation— H.	101	102.6	103.6	102	103.2	100.3	103	H 103.8
Ruptured L.	99	98	98.1	98.4	98	98	98	L 98
Pulse before Average	99	94	102	96	102	94	103	A 98
operation— H.	136	108	150	120	144	144	144	H 150
Unruptured L.	68	84	70	80	68	60	76	L 60

A—American or average. C—Colored—L.—low. Sm.—Summer W—Winter.
M—Mexican or male—H. high. Sp.—Spring. F.—Fall or female.

TABLE 1—(Continued)

YEAR		1926	1927	1928	1929	1930	1931	1932	Total
Pulse before operation—	Average	97	106	117	106	106	110	115	A 109
Ruptured	H.	120	140	138	139	140	149	160	H 160
	L.	88	76	90	90	66	82	80	L 66
W.B.C. count	Average	19760	14716	11957	13518	12716	13170	14804	A 13800
Unruptured	H	29000	19000	20800	32000	27250	22900	36600	H 36600
	L.	12800	12150	7150	7150	6000	7100	6200	L 5200
		5	9	7	17	31	37	38	144 caes
W.B.C. count	Average	12100	19760	16933	16900	14300	12133	18523	A 16073
Ruptured	H.	12400	28000	19000	26000	21000	15600	33500	H 28000
	L	11800	15700	15300	10450	8250	7550	2600	L 2600
		2	6	3	9	16	12	21	69 cases
Poly per cent	Average	78	84	79	83	81	81	80	A 81
Unruptured	H.	84	91	87	90	92	97	96	H 97
	L.	72	79	70	71	58	50	38	L 38
		5	9	5	17	30	37	38	141 cases
Poly per cent	Average	72	83	76	88.5	84	84	80.7	A 83
Ruptured	H.		85	80	95	91	91	92	H 95
	L.		80	71	81	66	71	65	L 65
		1	5	3	9	15	12	21	66 cases
Aver. L.M. Ratio	Av. 4.75-1	Av. 9-1	Av. 0.7-1	Av. 25.-1	Av.11.25-1	Av 4.9-1	Av. 7.9-1	Av. 6.6-1	
Unruptured	H. 6. -1	H. 15-1	H. 5.5-1	H. 3.611	H. 20-1	H. 18.1	H. 28-1	H. 28.0-1	
	L. 3.33-1	L. 6-1	L. 0-19	L. 1.6-1	L. 5-1	L. 1.5-1	L. 0.33-1	L. 0-1.9	
	4 cases	5 cases	3 cases	4 cases	8 cases	20 cases	21 cases	65 cases	
Aver. L.M. Ratio	Av.	Av. 5.5-1	Av. 1.8-1	Av.2.16-1	Av. 3.5-1	Av. 3.6-1	Av. 3.6-1	Av. 4-1	
Ruptured	H.	H. 13-0	H. 2-1	H. 6-1	Av. 3.3.5-1	Av.5.91	H. 10.5-1	H. 13-0	
	L.	L. 0-3	L. 1.12-1	L.	L. 0.75-1	L. 4.5-1	L. 0.5-1	L. 0-3	
	0 cases	6 cases	3 cases	1 case	4 cases	4 cases	16 cases	34 cases	
Av.nuclear index, Unrup.							Av. 5.5	Av. 5-1.4	
							H. 10.	H. 10.	
							L. 0.9	L. 0.9	
							15 cases	15 cases	
Ave. nuclear index Ruptured							Av. 1.8	Av. 1.8	
							H. 4.	H. 4.	
							L. 0.2	L. 0.2	
							9 cases	9 cases	
Av. white cell count,	Av.	Av.19250	Av. 19000	Av. 21750	Av. 18750	Av. 13930	Av. 17056	Av. 17490	
	H.	H. 17000	H.	H. 27250	H. 32000	H. 18400	H. 36600	H. 36600	
Fatal Cases	L.	L. 21500	L.	L 12500	L. 7150	L. 7800	L. 2600	L. 2600	
	0 cases	2 cases	1 case	3 cases	3 cases	5 cases	8 cases	22 cases	
Aver. poly percent.,	Av.	Av. 85	Av. 71	Av. 84.3	Av. 77.3	Av. 84.6	Av. 83	Av. 83.2	
	H.	H.	H.	H. 92	H. 88	H. 94	H. 92	H. 94	
Fatal Cases	L.	L.	L.	L 71	L. 70	L. 73	L. 65	L. 65	
	0 cases	1 case	1 case	3 cases	3 cases	5 cases	8 cases	21 cases	
Aver. L.M. ratio,	Av.	Av. 13-0	Av 1.25-1	Av.	Av. 0.75-1	Av.1.25-1	Av. 3.8-1	Av. 3.9-1	
	H.	H.	H.	H.	H	H.	H. 10.5-1	H. 13.0-0	
Fatal Cases	L.	L.	L.	L.	L.	L.	L. 0.75-1	L. 0.75-1	
	0 cases	1 case	1 case	0 case	1 case	1 case	9 cases	9 cases	
Av. nuclear index							Av. 1.75	Av. 1.75	
							H. 5	H. 5	
							L. 0.2	L. 0.2	
Fatal Cases							4 cases	4 cases	
Av. length	Av. 51	Av. 51	Av. 36	Av. 39	Av. 41	Av. 52	Av. 51	Av. 45	
Minutes of	H. 70	H. 65	H. 75	H. 85	H. 80	H. 105	H. 130	H. 130	
oper. unrpt.	L. 20	L. 13	L. 20	L. 25	L. 15	L. 25	L. 25	L. 13	
Av. l'gth	Av. 30	Av. 38	Av. 43	Av. 37	Av. 42	Av. 57	Av. 49	Av. 45	
minutes	H. 45	H. 65	H. 50	H. 65	H. 85	H. 110	H. 85	H. 110	
tper. rup.	L. 10	L. 15	L. 30	L. 15	L. 25	L. 30	L. 25	L. 10	
Total No.	M. 0	M. 1	M. 3	M. 2	M. 1	M. 3	M. 5	M. 15	
deaths	F. 0	F. 2	F. 2	F. 2	F. 3	F. 4	F. 3	F 16	
Deaths	M. 0	M. 0	M. 1	M. 0	M. 1	M. 1	M. 2	M. 5	
unrpt. cs.	F. 0	F. 0	F. 1	F. 2	F. 1	F. 4	F. 1	F. 9	

TABLE 1—(Continued)

YEAR		1926	1927	1928	1929	1930	1931	1932	Total
Deaths	M.	0	M. 1	M. 2	M. 2	M. 0	M. 2	M. 3	M. 10
rupt. cs.	F.	0	F. 2	F. 1	F. 0	F. 2	F. 0	F. 2	F. 7
Total oper.	Total	0	Tot. 16.6	Tot. 26.3	Tot. 8.9	Tot. 7.7.	Tot. 12.0	Tot. 12.9	Tot. 11.5
mortality	M.	0	M. 37.5	M. 37.5	M. 7.7	M. 4.3	M. 12.5	M. 17.2	M. 11.8
gross	F.	0	F. 28.6	F. 18.2	F. 10.5	F. 10.3	F. 11.7	F. 9.1	F. 11.3
Operative	Total	0	Tot. 14.3	Tot. 14.3	Tot. 6.3	Tot. 5.7	Tot. 11.4	Tot. 7.7	Tot. 7.6
mortality	M.	0	M. 0	M. 16.7	M. 0	M. 8.3	M. 5.9	M. 14.3	M. 6.6
unrpt. cs.	F.	0	F. 0	F. 12.5	F. 11.8	F. 4.3	F. 14.8	F. 4.0	F. 8.3
Operative	Total	0	Tot.	Tot. 60.0	Tot. 15.3	Tot. 11.8	Tot. 14.3	Tot. 21.7	Tot. 20.2
mortality	M.	0	M. 25.0	M. 100.0	M. 18.2	M. 0	M. 18.6	M. 20.0	M. 19.6
rupt. cs.	F.	0	F. 50.0	F. 33.3	F. 0	F. 33.3	F. 0	F. 25.0	F. 21.2
Operative mort. rup. cases S-D		0 2 cases	33.3 1 out of 3 cases	50 1 out of 2 cases	14.3 1 out of 7 cases	20 1 out of 5 cases	0 0 out of 1case	28.6 2 out of 7 cases	22.2 6 out of 27 cases
Op. mort. rup. cs. ap. & dr.		0 2 cases	40 2 out of 5 cases	66.6 2 out of 3 cases	16.6 1 out of 6 cases	8.3 1 out of 12 cases	15.4 2 out of 13 cases	19.3 3 out of 16 cases	22.8 11 out of 57 cases

A—Av; Avex—average; —H—high; L—low.
S. D.—simple drain; dr.—dram.
L. M.—lympho-monocytic.
Rup. or Rupt.—ruptured.
Unrupt. or Unrpt.—unruptured.
OP. Mort.—Operative mortality.
Cs.—cases.
Ap.-dr.—Appendectomy and drain.

(NOTE: Table No. 1 contains all the data obtained from the charts. It is given in detail as from it all other tables, with the exceptions of Nos. 10 and 11 were compiled.)

Thus, it will be seen that the lowering of the mortality rate in acute appendicitis is not so much a problem of the surgeon, for surgeons we already have in excellent abundance. It is rather a problem for the general practitioner, who first sees these cases, and of getting him to realize that they must be operated on immediately rather than waiting till morning to get a white blood count or to see if any fever develops. When the general practitioner is thoroughly imbued with this idea, it will not be long before the general public takes it up. Then, probably, we will commence to get results.

RESUMÉ OF TABLES APPENDED

The hospital records from which these tables were formulated, are, as a whole, sadly incomplete. Many contain but little more than the operative record. It is suggested that a more uniform plan of history taking be followed. The exact time and date of onset should be noted; history of previous attacks—if none, it should so be set down; it should be stated whether or not purgatives or enemas were given and to what extent and with what result; location of the pain, both at the beginning of the illness and at the time of the examination; vomiting, whether before or after the onset of the pain; and so forth. All of these things are invaluable in compiling statistics, if for no other reason.

It had been hoped that in this series the harmful effects of purgation could be brought out, but so few charts were encountered that even mentioned this subject, that the idea had to be abandoned. The same might be said of the location of pain at the onset of the illness; only a few went into detail in this matter.

Of anesthetics used, four were local, fourteen spinal, and the remainder ether or ether in combination with ethyl-chloride, ethylene, and so forth. No deaths were traceable to the anesthetic.

In **Table 1,** it is seen that acute appendicitis comprised an increasingly larger proportion of total hosptial admissions year by year, being 0.96 per cent in 1926, and 2.76 per cent in 1932. Total number of cases admitted annually increased from fourteen to sixty-two in that period. The nationality is about what we would expect here: forty-eight Americans, 216 Mexicans, and four colored. Females are in slight preponderance. The average age was 22.5 years. Out of the 268 cases 184 were unruptured and eighty-four, or 31⅛ per cent were ruptured. Of the unruptured, fourteen, or 7.6 per cent died and of the ruptured, seventeen, or 20.2 per cent died, giving a general mortality of 11.5 per cent. The average stay in the hospital after operation is interesting from an economic standpoint, being twelve days for the unruptured cases and 24.8 days for the ruptured. The temperature and pulse are not very illuminating, the average being 99.6° and

TABLE No. 2 — INDIVIDUAL OPERATOR'S RECORD

Operator	A	B	C	D	E	F	G	6 Other Operators	Total 13
Total number cases	56	50	49	37	24	22	13	17	268
Non-ruptured cases	42	27	33	26	15	16	9	16	184
Ruptured cases	14	23	16	11	9	6	4	1	84
Mortality all cases	12.5%	8%	16.32%	16.21%	4.16%	13.66%	7.7%	5 88%	11.5%
Mortality non-ruptured cases	4.76%	3.7%	15.15%	11.55%	0	12.5%	0	6.25%	7.6%
Mortality ruptured cases	35.71%	13%	18.75%	27.27%	11.11%	16.66%	25%	0	20.2%
Operative time all cases	Av. 41M H. 80 L. 13	A. 41M H. 110 L. 20	A. 46M H. 105 L. 10	A. 49.6M H. 110 L. 25	A. 45M H. 100 L. 25	A. 57M H. 85 L. 35	A. 63M H. 130 L. 35	A. 51M H. 145 L. 20	Av. 46.6 Mins. H. 130 L. 10
Operative time non-ruptured cases	Av. 42M H. 80 L. 13	A. 39M H. 80 L. 20	A. 49M H. 105 L. 20	A. 47M H. 70 L. 25	A. 46M H. 75 L. 30	A. 54M H. 65 L. 35	A. 66M H. 130 L. 35	A. 53M H. 145 L. 20	Av. 45 Mins. H. 130 L. 13
Operative time ruptured cases	Av. 40M H. 70 L. 15	A. 43M H. 110 L. 20	A. 41M H. 85 L. 10	A. 55M H. 110 L. 30	A. 44M H. 100 L. 25	A. 64M H. 85M L. 45	R. 56M H. 65 L. 45	A. 25M H. 25 L. 25	Av. 45 Mins. H. 110 L. 10
Ruptured cases S. D.	4	8	8	0	3	0	3	1	27
Ruptured cases appendectomy and drain	10	15	8	11	6	6	1	0	57
Mortality. Simple drain cases	50%	25%	0	0	0	0	33.33%	0	22.2%
Mortality, appendectomy and drain cases	30%	6.66%	37.5%	27.27%	16.66%	16.66%	0	0	19.3%
Deaths	Non-R 2 Rupt. 5	Non-R 1 Rupt 3	Non-R 5 Rupt. 3	Non-R 3 Rupt. 3	Non-R 0 Rupt. 1	Non-R 2 Rupt. 1	Non-R 0 Rupt. 1	Non-R 1 Rupt. 0	Non-Rup. 14 Rupt. 17

A.—Average
H.—High
L.—Low
R.—Ruptured
M.—Minutes
S. D.—Simple Drain
Rupt.—Ruptured
Non-R—Non-Ruptured

NOTE. This table shows the variations in the mortality rates of the different operators. Surgeons A, B, C, and E operated at stated intervals of three months yearly for the entire seven-year period. D, F, and G operated over a one-year period only.

TABLE 3
Relation of Delay to Mortality—(All Cases)
Hours from onset of symptoms to time of operation*

	Under 12 hours	12-23 hours	24-48 hours	49-72 hours	73-96 hours	Over 96 hours
No. of cases	7	23	51	42	45	83
No. of deaths	0	1	6	5	8	10
Mortality	0	4.3%	11.7%	11.9%	17.7%	12%

TABLE 4
Ruptured Cases; 31.3% of all cases*

	Under 12 hours	12-23 hours	24-48 hours	49-72 hours	73-96 hours	96 hours
No of cases	1	4	15	15	16	29
Per cent of all admissions in similar period time	14.3%	17.4%	29.4%	35.7%	35.5%	39.9%
Per cent of all ruptured case in series	1.19%	4.76%	17.85%	17.85%	19.04%	34.52%
No. of deaths	0	1	2	2	5	6
Mortality	0	25%	13.3%	20%	31.2%	20.7%

* 17 cases, including 4 ruptured cases and 1 death not included; no record of time on charts.

NOTE. Tables Nos. 3 and 4 are self-explanatory. It is interesting to note that in the ruptured cases the mortality rate is much lower in the 24-48 hour period than in the 12-23 hour period. Whether or not this would be borne out in a larger series is not known.

98° for the unruptured and 100.4° and 109° for the ruptured. A large number had normal temperature and pulse on admittance.

In blood work, 13,800 whites with 81 per cent polys, was the average for the unruptured; 16,073 with 83 per cent polys, for the ruptured. The fatal cases showed a slightly higher count of 17,499 with 83.2 per cent polys. The lymphocytic-mononuclear ratio was misleading in individual cases, but, when averaged up, was a pretty fair index as to the severity of the cases—the unruptured having a ratio of 6.6 to 1, the ruptured 4 to 1, and the fatal cases 3.9 to 1. Only in twenty-four cases was the nucelar index estimated, so not much information can be gathered as to its value from this small series. However, in these few, the prognostic value seemed to be much more constant in individual cases than did the lympho-monocytic ratio. The average was 5.4 for the unruptured cases, 1.8 for the ruptured, and 1.75 for the fatal cases. In all this blood work, the value seemed to lie more in the prognostic than in the diagnostic field—numerous cases presenting normal blood pictures. Interesting data are seen along this line in Tables 8 and 9. There were twenty-one cases with a white blood count of over 22,000, with six deaths; and there were twenty cases with a white blood count of under 8,000 with four deaths. This group of forty-one cases comprises slightly over 15 per cent of the entire series, yet it contained ten, or 32 per cent, of all the deaths. The highest blood count was 36,600 with 92 per cent polys and the lowest was 2,600 with 65 per cent polys. Both patients died.

The average time consumed in the actual operation seemed a little high especially for the ruptured cases, being 45 minutes for each type.

In the eighty-four ruptured cases, it was thought that some information might be derived from the type of operation performed. But either the series was too small or excellent judgment was used, as the difference is very slight: six cases out of twenty-seven dying where simple drain was resorted to, and eleven out of fifty-seven where the appendix was removed in addition. This gives a mortality of 22.2 per cent for simple drain as against 19.3 per cent for the latter method.

The individual operator's record (Table 2) is interesting. Surgeons "A", "B", "C", and "E" operated at stated intervals over the entire seven-year period, yet their mortality rates show wide fluctuations, being 12.5 per cent, 8 per cent, 16.32 per cent, and 4.16 per cent respectively. With the exception of "E", each had approximately the same number of cases. The operators "D", "F", and "G", extended over a one-year period only, and so their mortality figures are of practically no significance. All but two of the seventeen op-

erations performed by six other surgeons were gleaned from the gynecological service where, on operation, acute appendicitis was found to be the primary disturbance. All but one of these were of the non-ruptured variety and had a death rate of 5.88 per cent. The various operative times do not seem to have much bearing on the individual mortality rate; but one is inclined to believe that, in the aggregate, it is bound to have a perceptible influence.

The relation of delay to mortality **Tables 3 and 4** in the writer's opinion is of greatest importance and, while these tables cover only a very small number of cases, they are in entire accord with similar findings in much larger tabulations. (Bower, 3095 cases; Boland, 4270 cases.) Under 12 hours, from onset of symptoms to time of operation, there were no deaths; 12 to 23 hours showed a mortality of 4.3 per cent; 24 to 48 hours, 11.7 per cent; 49 to 72 hours, 11.9 per cent; 73 to 96 hours, 17.7 per cent. Over 96 hours, the mortality dropped to 12 per cent, probably indicating a rallying of the patient's defensive forces. The preceding figures apply to both ruptured and unruptured cases. In **Table 4**, which includes only the ruptured cases, there is a somewhat similar picture with higher rates, of course, with the exception of the 24 to 48 hour period. Here the rate is only a little over half of what it was in the preceding column. After this there is the gradual rise up to the 96-hour interval, and over that, a sharp decline. Whether any siginficance can be attached to this low rate in the third column or whether it is merely a coincidence, is not known. No such tabulation of ruptured cases alone can be found in the literature at hand. One wonders if this might not be the most opportune time in which to operate these cases—the time when the patient's resistance is at its highest.

But the lesson to be learned from these figures and in the larger ones compiled by other authors, is that if operation is performed within 6 to 12 hours after onset of symptoms, the mortality is practically nil, but it creeps up rapidly with each succeeding hour. The percentage of ruptured cases to total acute cases admitted has not decreased in the past year, being 29 per cent in 1926, 44 per cent in 1927, 26 per cent in 1928, 29 per cent in 1929, 32 per cent in 1930, 24 per cent in 1931, and 34 per cent in 1932. These figures all go to show that the danger of delay has not been sufficiently impressed on the public and general practitioner.

TABLE 5
Causes of Deaths

General peritonitis	18
General peritonitis with intestinal obstruction	2
Abscess	3
Acute dilatation of stomach	1
Pulmonary embolus and thrombosis	1
Gangrene of lung with early mediastinitis	1
Toxic myocarditis	1
Cerebral edema with herniation in foramen magnum	1
Shock	1
Undetermined	2

TABLE 6
Record by Decades

Age years	Patients	Per cent of all cases	died	Mortality
1-10	29	10.7%	4	13.8%
11-20	105	39.2%	9	8.6%
21-30	80	29.9%	9	11.3%
31-40	32	11.9%	6	18.8%
41-50	16	6.0%	2	12.5%
51-60	5	1.9%	1	20.0%
61-70	0	0	0	0
71-80	1	0.4%	0	0

NOTE. The second decade of life shows the lowest mortality rate but the highest incidence.

TABLE 7
Record by Months

Month	Cases	Deaths	Mortality
January	15	3	20.0%
February	22	5	22.7%
March	37	5	13.5%
April	20	2	10.0%
May	22	3	13.6%
June	33	2	6.0%
July	22	4	18.1%
August	30	1	3.3%
September	19	2	10.5%
October	14	0	0
November	13	1	7.7%
December	21	3	14.2%

But sending the patient into the hospital at the earliest possible moment is of no avail unless the operation is also done without loss of time. Referring back to **Table 1**, it will be found that, for the entire seven-year period, the **average stay in the hospital before operation** for all cases was 14 hours and in the unruptured cases, the ones in which lies our hope of reducing the mortality, this delay has increased rather than decreased in the past seven years, being 18.7 hours for 1926 and 23 hours for 1932. This is to be deplored and

TABLE 8

Cases with W.B.C. Counts of Over 22,000 (21 cases—6 deaths)

W.B.C.	Poly %	Tmpt	Pulse	Time sick on admis.	Rigidity	Findings at operation	Outcome
33600	92	103	144	30 hrs	RLQ	Necrotic appendix	Died
34400	82	99.4	100	72 hrs	slight RLQ	Ac. suppurative appendicitis with gangrenous walls	Recovered
33500	76	101.6	129	7 days	RLQ	Ruptured appendix	Recovered
32000	90	100.4	120	24 hrs	entire abdomen	As. appendicitis, bilateral salpingitis	Died
30800	90	101.6	160	58 hrs	?	Rupt. appen. with append. abscess	Recovered
30000	96	100.4	128	60 hrs	entire abdomen	Gangrenous appen. with rupture and peritonitis	Recovered
30000	90	101	140	48 hrs	"Right side"	Ac. suppurative, retrocecal appendicitis	Recovered
29000	84	101.8	136	72 hrs	RLQ	Ac. appendicitis, normal 6 mos. pregnancy	Recovered
28500	96	99.4	120	48 hrs	RLQ	Ac. suppurative appendicitis	Recovered
28000	88	98	116	?	?	Appendiceal abscess & peritonitis	Recovered
27250	88	103	120	96 hrs	RLQ	Acute appendicitis	Died
26000	92	101.6	90	5 days	ent. abd.	Ruptured appendix	Died
25000	96	102	132	48 hrs	Markd. abdominal	Ac. suppurative appendicitis and peritonitis	Recovered
24400	92	100	90	11 hrs	entire right side	Ruptured appendix with gen'l peritonitis	Died
24600	65	103	140	20 hrs	Board-like	Gangrenous appendix and rupture	Recovered
23750	86	101	140	48 hrs	RLQ	Ruptured appendix	Recovered
23750	84	97.3	68	2-3 days	RLQ	Acute appendicitis	Recovered
23600	87	102.8	132	30 hrs	RLQ	Ac suppurative appendicitis	Died
22900	85	97	120	24 hrs	"Both recti"	Acute appendicitis	Recovered
22500	94	103.2	130	72 hrs	entire r-side	Ruptured appendix	Recovered
22200	85	102.6	104	72 hrs	RLQ	Rupt'd. gangrenous appendix	Recovered

serves to bring home the fact that our surgeons are not thoroughly awake to the increased risks to which they are subjecting their patients.

Table 5 gives the causes of death. Peritonitis is responsible for twenty out of the thirty-one cases. The distinction between spreading and local peritonitis is not made on the charts. It should be. Of the other eleven deaths, three are attributed to abscess and one each to acute dilatation of the stomach, pulmonary embolus and thrombosis, gangrene of the lung with early mediastinitis, toxic myocarditis, cerebral edema with herniation in the foramen magnum, and shock. Two were undetermined. Probably some of these, had cultures been made before death, would have been found to be caused by streptococcic septicemia. Out of the thirty-one deaths, fourteen autopsies were obtained. This is 45 per cent for the seven-year period. In 1932, 60 per cent of the deaths were posted.

The second decade of life showed the highest incidence (39.2 per cent), while it and the third decade account for nearly 70 per cent of all cases. Also, the death rate in the second decade is the lowest, 8.6 per cent. All this, of course, was to be expected and is in line with the usual teaching that appendicitis is a disease of youth. Twenty-nine patients, or 10.7 per cent, were in the first decade, only two cases occuring under five years. Of these twenty-nine cases, twelve were ruptured, which is 40 per cent—a pretty high incidence goes to show the seriousness of the disease in childhood. However, when these cases are analyzed a little more closely, it is found that the average time sick before operation was 6.27 days as compared to the general average for all cases of 3.6 days. So one wonders if this delay, coupled with the fact that these little fellows, being defenseless, are subjected to purgation and other drastic measures to a greater extent than are adults, is not the main factor responsible for this increased morbidity and mortality, rather than any inherent increase in virulence at this age.

The seasonal incidence (Table 7) is greatest for spring and summer and least in the Fall. March, June and August show the largest number of cases. However, the highest mortality occurred durnig the winter months

TABLE 9
Cases with W.B.C. Counts Under 8,000 (20 cases—4 deaths)

WBC	Poly %	Tmpt	Pulse	Time sick on admis	Rigidity	Findings at operation	Outcome
7800	94	102	144	24 hrs	Both recti.	Ac. appendicitis and gen. peritonitis	Died
7750	76	98	100	?	None	Acute appendicitis	Recovered
7600	87	99.2	80	?	None	Ac. append. Tbc. peritonitis	Recovered
7550	77	98.4	82	48 hrs	very slight RLQ	Ac. appendicitis, old walled-off rupture	Recovered
7500	81	99.4	100	72 hrs	slight if any	Acute appendicitis	Recovered
7300	38	100	84	72 hrs	None	Subacute appendicitis	Recovered
7300	76	99.4	100	72 hrs.	Marked gen'l.	Rupt'd. append. gen'l. peritonitis	Died
7250	77	98.4	80	20 hrs	Both recti.	Acute appendicitis	Recovered
7150	76	99	84	48 hrs	None	Acute appendicitis	Recovered
7150	.	96.4	76	4 hrs	RLQ	Ac. gangrenous appendicitis	Recovered
7150	71	99.4	88	?	None	Subac. appendix; cystic ovary	Died
7100	79	97.8	92	14 days	None	Subac. append. Tbc. lymph node from cecum	Recovered
7000	68	99.4	94	6 days	"Some" RLQ	Acute appendicitis	Recovered
6600	72	98	76	8 days	RLQ	Ac. suppurative appendx. long stand'g. retro-cecal.	Recovered
6600	76	98.6	80	96 hrs	?	Moderate acute appendicitis	Recovered
6400	71	99.2	100	?	None	Subacute appendicitis	Recovered
6000	58	99.1	92	?	"Some"	Ac. append.; sarcoma of uterus	Recovered
6000	72	98	78	?	None	Ac. hemorrhagic appendicitis	Recovered
5200	72	98	86	24 hrs	slight RLQ	Subacute appendicitis	Recovered
2600	65	?	?	48 hrs	very slight	Ruptured appendix and gen'l. peritonitis	Died

NOTE. Cases in Tables 8 and 9 comprise only 15% of the entire series yet contain 32% of all the deaths.

(19 per cent), Spring coming next with a mortality of 12.6 per cent, and summer and fall with 8.3 per cent and 6.3 per cent respectively.

As stated earlier in this paper, an increasingly larger proportion of total hospital admissions, taken year by year, is composed of acute appendicitis cases, increasing nearly three-fold in the seven-year period. Likewise, by reference to Table 10, it is seen that the percentage of appendicitis deaths as compared to the total hospital deaths, has shown an approximately similar increase, jumping from 1.34 per cent in 1927 to 3.20 per cent in 1932, in face of the fact that the general or total mortality rate for the hospital had shown a slight decrease during the same period. This, taken together with the total gross operative mortality, as given year by year in Table 1, with its gradual upward trend in the past four years, speaks volumes on our lack of progress in the treatment of this disease.

The same thought is borne out for the City at large (Table 11), where in the past three years the percentage of total deaths due to operated appendicitis has increased from 1.08 per cent to 1.84 per cent, and where the deaths per 100,000 population for both operated and non-operated appendicitis have increased from 21.3 to 34.5 over the same period. (Prior to 1930 the data available at the Registrar's office are not reliable, as appendicitis deaths were often classified as peritonitis or pneumonia or deaths from other causes when the death certificate did not give appendicitis as the principal cause of death.)

CONCLUSIONS

1. The mortality rate in acute appendicitis in the City-County Hospital of El Paso and in the City at large, has not been reduced in re-

TABLE 10
Appendectomy Deaths Compared to Total Deaths and to General Mortality Rate.
CITY-COUNTY HOSPITAL

Year	Total Admissions	Total Deaths	General or Total Mortality Rate	Operated Appendicitis Deaths	Per Cent of Total Deaths Due to Operative Appendicitis Cases
1926	1449	201	13.87%	0	0
1927	1387	223	16.07%	3	1.34%
1928	1656	253	15.27%	5	1.97%
1929	2031	284	13.98%	4	1.41%
1930	2422	312	12.88%	4	1.28%
1931	2014	230	11.42%	7	3.04%
1932	2248	250	11.12%	8	3.20%
Total	13207	1753	13.27%	31	1.76%

2. This increased mortality rate is not due so much to faulty technic—although it behooves each individual surgeon to scan carefully his operative record in an attempt to determine wherein he might have been at fault (vide Table 2)—as it is due to faliure on the part of both the profession and lay public to recognize the importance of very early operation. Hospitalizing the patient early is useless unless cooperation on the part of the surgeon is obtained and the case is treated as an emergency one.

3. The increased mortality rate in infancy and early childhood is probably not due so much to increased virulence and decreased resistance as it is to delay and purgation.

4. The lowering of the death rate is not so much a problem of the surgeon as it is of the general practitioner who sees these cases first and in whose hands rests the responsibility of teaching the family or public the seriousness of the disease from the very onset..

5. The only dependable signs in making an early diagnosis are pain on pressure over the appendix and involuntary muscular spasm. By the time the classical picture develops, the patient's life may be despaired of. Blood work finds its chief value as a prognostic indicator, although it must be admitted that it often helps in the diagnosis.

6. Purgation, of course, is to be deplored in all acute abdominal conditions.

7. Opiates, if given only to relieve pain

TABLE 11
Appendectomy Deaths Compared to Total Deaths and to General Mortality Deaths
CITY AT LARGE

Year	Population U. S. Census	Total Deaths	General Mortality Rate Per 100,000 Population	Operated Appendicitis Deaths	Per Cent of Total Deaths Due to Operative Appendicitis Cases	Non-Operative Appendicitis Deaths	Per Cent of Total Deaths Due to Non-Operated Appendicitis Cases	Total Mortality Rate of All Appendicitis Cases Per 100,000 Population
1926	94,789	1696	1789.2	9	0.53%	2	0.12%	11.6
1927	96,824	1626	1679.3	12	0.74%	2	0.12%	14.4
1928	98,859	1962	1984.6	5	0.25%	0	0	5.0
1929	100,894	1928	1910.9	7	0.36%	1	0.05%	7.9
1930	102,930	1751	1701.1	19	1.08%	3	0.17%	21.3
1931	104,965	1557	1483.3	18	1.15%	8	0.52%	24.7
1932	107,000	1462	1366.3	27	1.84%	10	0.69%	34.5
Total	100,894	1111.7	1696.5	13.86	0.81%	3.7	0.21%	17.4

(NOTE: The general mortality rate in both the City-County Hospital and in the city at large has shown a distinct downward trend while the percentage of total deaths due to appendicitis has increased considerably.)

TABLE 12
Delay in Hospital Before Operation
Unruptured Cases.

Year	2 hours or under	3-4 hours	5-6 hours	7-8 hours	9-10 hours	11-12 hrs.	Over 12 hours	TOTAL
1926-1929 incl.	14	16	5	4	0	4	23	66
1930	12	8	3	0	0	0	12	35
1931	9	12	3	2	2	1	15	44
1932	9	6	6	1	0	0	17	39
Total	44	42	17	7	2	5	67	184

This table would seem to indicate that the surgeons of the hospital have not yet been inmubed with the idea that acute appendicitis should be treated as an emergency.

cent years, but on the contrary, has actually shown an increase, in spite of the fact that a larger proportion of cases are being subjected to surgery.

TABLE 13
Delay in Hospital Before Operation
Ruptured Cases

Year	2 hours or under	3-4 hours	5-6 hours	7-8hours	9-10 hrs.	11-12 hrs.	Over 12 hours	TOTAL
1926-1929 incl.	6	10	2	2	0	0	10	30
1930	7	6	0	1	0	1	2	17
1931	3	7	0	0	0	1	3	14
1932	8	6	4	1	0	1	3	23
Total	24	29	6	4	0	3	18	84

(NOTE: What percentage of these, if any, ruptured while in the hospital awaiting operation is impossible to state.)

after diagnosis has been made and as a preliminary to operation, are entirely permissible.

8. It is believed that invaluable information would be obtained if a review, similar to the one presented, were to be made of all the appendicitis cases in the various hospitals of the city for the past several years. Only through information gained by such study can we hope to reduce our mortality.

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PUBLIC HEALTH NOTES

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The Public Health Nurse

The number of public health nurses in the United States has increased from 3,000 in 1912 to 20,000 at the present time. In New Mexico we had only 11 nurses in 1929 whereas today we have 38. Only two counties are without a public health nurse and since provision has been made in both counties to meet the cost of a nursing service it can reasonably be expected that before long every county in the state will have at least one public health nurse.

The program that has been made in New Mexico must go to the credit of The Commonwealth Fund of New York whose generous subsidy has made possible demonstrations in more than half of the counties. These demonstrations have convinced not only the counties immediately concerned but also their neighbors so that it may now be said that public health nursing in the state rests on a secure basis of popular demand.

The growth of public health nursing is of considerable importance to the rural doctor. Few of his patients can afford to employ a private duty nurse. The result is that he must either do without much needed help, or he must employ a "practical" nurse whose uneducated influence may be actually dangerous and likely far from ideal. The dilemma caused a lively debate at the last annual meeting of the Colorado State Medical Society; and one does not find in the published report any reference to the public health nurse as a solution. It is possible that public health nursing has not yet made headway in rural Colorado.

The public health nurse solves the above dilemma. In the rural home she demonstrates nursing care. At the doctor's direction she teaches right methods of care and of prevention. She can take more time in each home than the doctor can afford to spend and yet she will have enough time to care for several patients. Even this program cannot be properly developed with the present supply of public health nurses. One nurse working in a county a hundred miles across and among a population of 20,000 or more will obviously be kept busy with quarantine, vaccinations, school inspection and the like. But it is not too soon for nurses and rural doctors to get acquainted and to start planning together for close team work which in the future they will surely enjoy.

This association will be as advantageous to public health as to private medicine. For example, it can be of immense service in the control of rural outbreaks of syphilis. The public health nurse is trained in professional ethics; she understands the need for tact; she has the confidence of the people in the homes which she has visited; she has that same intimate relationship which the doctor himself enjoys. If the nurse can also have the confidence of the doctor she can help him to trace and bring under treatment if needed the contacts of every contagious case.

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LABORATORY REPORT ON THREE CASES OF UNDULANT FEVER IN NEW MEXICO

by

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Undulant fever has been a problem in New Mexico, but since no one had isolated cultures, either from animals or individuals, one could only prophesy as to the type of Brucella prevalent. It was for the purpose of isolating cultures that the laboratory asked for the cooperation of physicians who had undulant fever patients. Personnel and travel expenses were not available for field work, and blood cultures for Brucella do not ship well. Therefore, we decided to ask the physician to inoculate guinea pigs with blood freshly drawn, the pigs sent to the physician for this purpose.

On March 5th, 1934, we received a specimen of blood from Dr. J. W. Hale, Grady, New Mexico, taken from his patient, V. T. The serum agglutinated B. Typhosus antigen in a dilution of 1-160, B. Paratyphosus B. antigen in a dilution of 1-20, and polyvalent Brucella antigen in a dilution of 1-1280. The following history was received, with Dr. Hale's consent to inoculate pigs.

"V. T. is a farmer, 47, weighs 150 pounds, and until the present illness has been unusually strong. He has not had typhoid fever or been given typhoid vaccine. There has been no typhoid in V. T.'s neighborhood for 15 years. He has had fever for 114 days. Last November he went deer hunting in the western mountains, and became ill. There is no history of contagious abortion on his farm. The patient uses cow's milk sparingly, uses no goat milk, and is not in contact with goats."

Under date of March 28th, Dr. Hale inoculated two guinea pigs intraperitoneally, each with five cc. of blood taken from V. T. At this time, the patient had been ill 120 days. His temperature had started to drop, being normal in the morning, starting up about 10 a. m., and dropping to normal about 10 p. m., and never rising above 100 degrees.

On May 10th, two cc. of blood were taken from each of the pigs. The sera gave no reaction with the polyvalent Brucella antigen. One pig was autopsied, and no abnormality could be found in its organs; May 24th, the second pig was autopsied, and again only normal conditions were found.

We received a specimen of blood from Dr. E. P. Simms, Alamogordo, New Mexico, July 30th, taken from his patient R. S. The serum gave no reaction with either B. Typhosus, B. Paratyphosus, or B. Tularense antigens, but agglutinated the polyvalent Brucella antigen in a dilution of 1-640. Dr. Simms, upon request, inoculated and returned guinea pigs shipped to him and later sent the following case history:

"Patient's name: R. S.; age 25; single, Spanish-American; occupation—farming and stock-raising; first seen while I was on a water inspection trip in Nogal Canyon, July 27, 1934. At that time he approached me on crutches, and wanted me to give him something for his rheumatism. After questioning him closely, Malta fever was suspected. He was brought to town and blood sent to the laboratory that day. The report returned was 'positive' for Malta fever. Guinea pigs were inoculated with five cc. whole blood August 11.

"About June 1st, 1934, after he had been engaged in shearing goats for a period of approximately thirty days, he became ill. He stated that he thought he had a 'cold.' The symptoms of the illness consisted of headache, general malaise, bad taste in the mouth, and fever, which persisted for a period of about 20 days, with intermittent spells during which the patient felt better. He then, about June 20th, began to experience pain in the right shoulder and back of the neck. The pain was continuous and worse upon movement. It was followed within a few days by a pain in, and swelling of, the little finger of the right hand. The shoulder, neck, and finger improved, but in the course of a week, the patient began to have a severe pain in the right hip, which radiated downward to the right leg. The pain

was so intense that the patient could not walk without the aid of crutches. During all this period the general malaise, fever, and headache continued, and as a result of the pain in the hip the patient was confined to bed for about a month.

"In September, approximately three months after the onset of his illness, the patient began to have pain and soreness in right lower quadrant of the abdominal wall. Within a few days the right testicle became greatly enlarged, tender and painful. As a result of this he was confined to bed for another period of about three weeks. At the present time he has been out of bed approximately three weeks, and has no subjective symptoms other than that of marked weakness.

"At no time during the course of his illness has the patient had any symptoms referable to his gastro-intestinal tract, cardiovascular system, or urinary system. His appetite has been good throughout.

"I found his temperature ranged to 102 degrees F. Upon the last examination, December 9th, 1934, there were no objective or subjective findings other than marked loss of weight, extreme pallor, and extreme weakness. His nutrition would probably have been better had he had an adequate diet, but the family has been in very poor circumstances. The man states that he never drinks goat's milk and has had no cow's milk.

"The most interesting part of my investigation is revealed by the contact with four other men who live in the neighborhood, one the brother of the patient, all of whom have had almost the identical type of illness, i.e., a prolonged febrile illness, marked by headache, malaise, weakness and arthritic-like type of pain moving from one point to another. There were no testicular complications among this group of four. From none of them was I able to elicit any history of continued high fever, or any abdominal or gastro-intestinal symptoms. One case became ill last August and is now apparently recovering. This case experienced swelling of the joints. All of these men are in contact with goats a part, if not all the time."

The two pigs inoculated August 11th with four cc. of blood each from R. S. were bled September 24th. Blood from pig one agglutinated the Brucella antigen in a dilution of 1-80. Blood from pig two gave no reaction with this antigen. Pig was autopsied September 27th. Two lobes of the liver were pitted with small gray, translucent nodules. The spleen was greatly enlarged and granular. No change in the testicles was observed. Lungs were normal in appearance. Plates of liver infusion agar (1) were inoculated from liver and spleen. Part of the plates were incubated in a jar with approximately 10 per cent of the air replaced by carbon dioxide; the remainder of the plates were incubated in normal atmosphere. After 72 hours colonies were present on both sets of plates in equal numbers. The organism was a very short, Gram negative rod which was agglutinated by a serum from a known case of Brucella infection in a dilution of 1-1,280. This culture was sent to I. Forest Huddleson, Michigan State College, for identification. He found it to be Brucella melitensis. (Brucella melitensis var. melitensis.)

The laboratory received a specimen of blood, on August 11th, from Dr. W. N. Worthington, Roswell, New Mexico, taken from his patient J. D. The serum gave no reaction with either B. Typhosus or B. Paratyphosus antigen, but agglutinated the polyvalent Brucella antigen in a dilution of 1-640. Upon request, Dr. Worthington sent the following history and consented to inoculate pigs.

"J. D. was on a camping trip on the Conejos river, Archuleto county, Colorado, from June 30th until July 6th. While there she drank from the stream. On her return through Rio Arriba county she was greatly distressed by dust. At no time did the patient use goat's milk or come in contact with goats or cattle. She has consumed only pasteurized milk at home but used raw cow's milk during the trip. The first symptoms were noticed July 18th when she suffered with general malaise and headache. J. D. went to bed July 25th. She had a remittent fever for ten days, and then a period of very little fever. From August 15th until August 20th her temperature ranged from 97 degrees to 104.6 degrees. During this period of high temperature the patient had chills once or twice daily but during the following two weeks the chills occurred only occasionally. Five weeks later, for a period of three days, the patient had a high temperature

but did not have chills. She showed marked improvement during the next two months with only an occasional rise in temperature. At this date (December 22) the patient is still unable to resume her work."

The two pigs inoculated August 22nd with the blood from J. D. were bled September 27th. Their blood gave no reaction with the Brucella antigen. They were bled October 11th, and gave no reaction. On November 8th they were bled again, and blood from one pig agglutinated the Brucella antigen in a dilution of 1-2560. The second pig gave no reaction. The reacting pig was autopsied, November 9th. A few translucent spots were found on one lobe of the liver. The spleen was greatly enlarged and granular. Liver infusion plates were inoculated from the liver and spleen. Plates were incubated in the atmosphere and in the jar with 10 per cent of the air replaced by carbon dioxide. After 72 hours, colonies were present on plates incubated in the jar. There was no growth on the plates incubated in the atmosphere. The organisms grown were short, Gram negative rods, and were agglutinated by a Brucella melitensis immune serum, as supplied through the kindness of Dr. W. H. Kellogg, Department of Public Health, Berkeley, California, in a dilution of 1-2560. After several transfers this culture grew sluggishly in the atmosphere. The culture was sent to J. Forest Huddleson, Michigan State College, for identification, and he found it to be Brucella abortus (Bang). (Brucella melitensis var. abortus.)

CONCLUSIONS

Two species of Brucella organisms were isolated from undulant fever cases in New Mexico. This was accomplished by inoculating guinea pigs with fresh, whole blood from the patient.

TWO'S COMPANY—THREE'S A CROWD

"Sickness is a matter intimately personal. It is a time when sincerity of dealing cannot be compromised nor human feelings flouted.

"How disturbing, then, is the thought of having a third person or alien party exercise an influence on the relationship between the patient and his physician, the two persons who, above all others, are most vitally concerned when sickness enters the home.

"Yet this third party influence, with all its unpleasant and disturbing sequels, will inevitably be thrust upon patient and physician should some of the concurrent new schemes of medical practice ever gain acceptance.

"Carried to their full development, such plans would mean that your family doctor would be the hireling of a commercial organization or of a department of the state, the former built up necessarily by business promotional efforts, high pressure salesmanship and price competition, the latter made compulsory by legal enactment.

"Experience has already shown that contract or insurance schemes would not be successful if they observed carefully the principles of conduct and fair competition which operate as definitely for the public good as for professional honor. In these principles financial gain is subordinated to the prime object of service to the patient and to humanity.

"Furthermore, the history of some of these ventures reveals highly deplorable tendencies. "Scare head" advertising has appeared as a means of frightening people into subscribing for memberships. Medical service has been promised at ridiculously low and actually impossible rates. The services of hundreds of physicians have been promised to subscribing members, whereas actually but a small fraction of that number were "signed up" and available. Patients have found that they must be served by the physician assigned to them, not by the man of their choice. And the poorer classes have paid the same price for medical service as the very wealthy.

"No, the fine, sympathetic, humanitarian service at present rendered by the family physician can never be satisfactorily replaced by a commercial organization that retails medical service for a profit, nor by the state with a mechanized or regimental medical profession. The interjection of such agencies between patient and physician is unnecessary and cannot fail to be disturbing to all parties."—From Mead Johnson & company's Announcement in Hygea, September, 1934.

APPENDICITIS DEATHS

In this issue will be found a paper[1] by one of our members dealing with an analysis of statistics of deaths from appendectomies. The interesting and startling conclusion is that the death rate has not decreased in recent times, as should be expected from the improvements in surgical technique. It is explained and demonstrated by his statistics that operations so often are not done soon after the onset of the attacks. Dr. J. H. Blackburn says that there has been a definite increase in the total number of cases of acute appendicitis as well as a relative increase in incidence in recent years. He found that the operative risk is less the first day than of any other period. In his conclusions the charge is made that the nearly universal use of laxatives in abdominal conditions contributes much to the fatalities from appendicitis; and that the public should be educated away from the laxative habit even though much educational work, time and patience on the part of the profession will be required to do it.

1. Southwestern Medicine, 28:141-144, Feb. 1935.
2. So. Med. Jour., Feb., 1935.

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A PROPOSED HEALTH INSURANCE LAW

The medical profession will have forced upon it sooner or later radical changes, unless it is thoroughly aroused to the threatening programs. The changes may entail serious disadvantages both to the public and to the profession; if we keep ourselves informed and cooperative with our organizations and do what we can to guide the changes, the practice of medicine may be made more satisfactory than it is at present.

The American Association for Social Service has prepared a tentative draft of a model State Health Insurance bill, the passage of which by State Legislatures will certainly be attempted.

You may well ask who is the American Association for Social Security. The officers are as follows: Miss Jane Addams, Bishop Francis J. McConnell, Mr. Alfred I. Dupont, Mr. Glenn Frank, Mr. John A. Lapp, Mr. I. M. Rubinow, and Mr. Herbert S. Bigelow; Mr. Abraham Epstein, New York City, is Executive Secretary.

The proposed law covers 30 pages going into great detail. It is to be known as the Health Insurance Law. We shall quote from two paragraphs: Sec. 4, Art. 5: "Extent of Medical Benefits. The medical benefits shall consist of (a) the services of a general medical practitioner at his office, hospital or elsewhere in preventive, diagnostic and therapeutic treatment and care; (b) on the prescription of the general medical practitioner, general and special hospital treatment and care which shall include nursing and the other usual hospital services; (c) pre-natal and maternity treatment and care at home or in a hospital; (d) on the prescription of the general medical practitioner, the services of a surgeon, diagnostician, medical or other specialist at his office, hospital or elsewhere; (e) on the prescription of the general medical practitioner, the services of laboratories and clinics; (f) the services of a general dental practitioner in xeodontia, amalgam fillings and prophylactic treatment care.

Sec. 6, Art. 4: "(d) The determination as to the kind of voluntary additional medical benefits to be furnished and as to the persons to whom and the areas in which they are to be furnished, the groups and classifications established, the designations made, and rating system and the rates of premiums to be paid and all of the rules controlling the execution of the provisions of this section may from time to time (subject to the conditions and limitations imposed by this section) be reconsidered and altered in any particular by the commission."

The administration of the law would be in the hands of a physician but over him would be a commission of which the physician members would be a small minority.

It is the extremest folly to hold that a person of the character of Miss Jane Addams has anything but the highest motive in promoting this program. It is probable also the same is true for other interested persons.

Such facts should at least make us serious minded over their proposals. Should we, so far as it is possible, be in the midst of every move which concerns us or shall we take a "standoffish" policy? It seems to us that we should be wide awake and, if possible, be ahead of the band wagon.

Unless the board of managers has serious objection, we shall be glad to publish short

letters from our members on the subject of state medicine and medical economics.

The Federal Medical Program

Secretary of Labor, Francis Perkins, has appointed a medical advisory board to the committee on economic security which was recently organized. It will be the duty of this advisory board to assist in the study of economic problems arising from illness, in families of the low income group, a study of which is to be undertaken by the major committee.

The medical group is as follows: Dr. Walter L. Bierring, President American Medical Association, Des Moines; Dr. Harvey Cushing, professor of neurology at Yale; Dr. Stuart R. Roberts, professor of clinical medicine at Emory University; Dr. George Crile, Cleveland Clinic Hospital; Dr. Thomas Parran, Jr., New York State Commissioner of Health; Dr. James Alexander Miller, professor of clinical medicine, College of Physicians and Surgeons, New York; Dr. Robert B. Greenough, president American College of Surgeons, Boston; Dr. George M. Piersol, past president, American College of Physicians, Philadelphia; and Dr. J. Sheldon Horsley, of Richmond, Virginia.

JOHN KELLY MOEUR, M. D.

Death has taken from the ranks of Arizona's medical profession one of its reputable and highly respected members—Dr. John Kelly Moeur of Tempe, son of Dr. and Mrs. Benjamin B. Moeur.

Dr. John, the name by which he was best known in the profession and by his vast score of friends, passed away on the evening of November 30, following a lingering illness. Burial was in the Double Butte cemetery in Tempe on December 3, 1934.

He was born in Tempe, June 8, 1897, the eldest son of Dr. and Mrs. Benjamin Moeur. Through his life he followed in the professional footsteps of his father. When the senior Dr. Ben was elected governor of Arizona, Dr. John carried on the professional activities of the family, the fourth physician of the Moeur family in a direct line starting with Governor Moeur's grandfather.

He was married December 8, 1921, to Miss Mary Carter of Vienna, Illinois. To the union was born one child, John Carter Moeur.

After attending the University of Arizona in 1916 and 1917, he went to the University of Illinois, from which institution he was graduated in 1922. At the University of Arizona he was a member of the Sigma Alpha Epsilon fraternity.

Highly respected by all who knew him, Dr. John's brave and ever cheerful battle against ill health which overtook him during the last years of his young and promising life, while at the same time seeking, when physically able, to bring health to others through his profession, won him widespread admiration throughout the Salt River Valley and even the entire state.

Perhaps no greater tribute can be paid to Dr. John than that given by John J. Phillips, a member of the Arizona legislature, at the time the young physician died. The legislator, in a poem pictured Dr. John as "unselfish, unassuming and with no thought of personal gain."

"If the record of such living
Can be proved by wreaths and flowers,
Today we lost a hero,
All his life a friend of ours."

He is survived by his widow, son, father, mother, brother, Benjamin B. Moeur, Jr., and two sisters, Mrs. Vyvyan Parmelee, Salt Lake City, and Mrs. Jessie Bell Hamilton, Los Angeles.

G. C. T.

NEWS ITEMS

At the meeting of the Kansas Club of Prescott, Dr. Clarence E. Yount sang a solo.

Dr. Nelson D. Brayton is district governor of the Arizona Lions Club and has been taking prominent parts on programs in the various Lions clubs of the state during the past several months.

Dr. A. H. Schermann of Flagstaff is the county health officer of that county.

Dr. A. J. McIntyre of Phoenix served as chairman of the president's birthday ball of Phoenix.

Dr. L. P. Lufty of Jerome has been appointed surgeon-in-chief of the United Verde Extension Mining Company.

Dr. Rembert H. Thigpen of Jerome has been incapacitated for several months because of a broken leg. He has recently resigned his position as surgeon-in-chief of the United Verde Extension Mining Company.

Dr. George R. Robinson, Yuma, and Dr. John Hagen, Inspiration, were visitors in Phoenix recently.

Dr. C. A. Donaldson, Mesa, addressed the parent-teacher association of the Franklin school on a topic concerning alcohol and narcotics.

Dr. Harry R. Carson, who has been ill for several months, is on the mend and it is expected that he will soon be able to get to his office.

A CORRECTION

In last month's issue one line of Dr. Redford A. Wilson's paper was omitted. The paragraph was on morphine sensitization: This paragraph is being reprinted:

The bronchial reaction to any substance to which the patient is sensiitve, is familiar to everyone. The wheal appearing at the site of injection of morphine resembles in every respect a positive skin reaction to an antigen to which the patient is specifically sensitive. There is proof that some people are as sensitive to morphine as they are to any other antigen. If the patient with status asthmaticus should be sensitive to the opiate, the administration of morphine will naturally aggravate the condition it is given to relieve.

ATTENTION, READERS:

Existence of a journal depends to a large extent on revenue from advertisements. Continuance of advertisers depends on their patronage. Therefore, patronize those appearing in this journal. Detach and mail coupons attached to advertisements. Thus you may receive something for nothing. Readers are requested to observe these suggestions.

Application blanks are **now available** for space in the **Scientific Exhibit** at the **Atlantic City Session** of the **American Medical Association**, June 10-14, 1935. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient. Applications close February 25, 1935.

Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

LETTER COLUMN

"Dear Editor:—Don't forget to call on Warner now and then, because he had been editor so long he was gettin' good. It's a peculiar thing to me, but it's a fact, every one of our free clinics simply rejoice around about sun down when they have had a lot of patients, had a big day; they just 'gloat' over the day's record. They deal in numbers. I think when we all get to advertising (like I hear we're going to), why, these clinics of ours will have theirs, too. Tom Imler is making some hollow glass tubes filled with light, and he can twist 'em so they will spell **'Free Clinic.'** . . . . based on the present trend of world-wide happenings, within ten years from now Medicine in the United States will be under DICTATOR-SHIP. . . . Of course, we do not expect you, through the power of your pen, to push or press us into the presence of a 'Medical millenium,' (it's not coming), but as one who hears subdued guttural sounds daily coming from dissatisfied medical men, desirous of forming groups of 'Fundamental Medical Workers' in our midst, and who are furnishing the 'fingers that are writing upon the wall,' I earnestly and sincerely solicit your deep meditation in the behalf of us all, asking of you to tell us—'Why I am not, or am, satsified with the present regime of medicine as is practiced in this county.' Secondly—'Why I think we should, or shouldn't lock the keys, wires and roads to and from 535 N. Dearborn St., Chicago, in dealing with our local medical questions."

HARLEY YANDELL, M. D.

Short excerpts from a letter from Dr. H. Yandell appear in this issue in a column which we designate "Letter Column." While the Doctor's remarks are written in facetious style, they contain much matter for thought. His last line prompts the suggestion that organized medicine must become more closely knit than in the past even, if we are to yield influence in the coming transformation of our system of practice. It is letters along this line, however, to which the letter column is open. We regret that this, the first letter, was too long for our limited space.

ARIZONA MEETING

The **1935 meeting of the Arizona State Medical Association** is announced for **Apdil 25, 26, 27.** The meeting place is **Phoenix.** An **excellent program** is being prepared and will be announced next month in the journal. The program committee is: President-elect, C. R. K. Swetman, Dr. D. F. Harbridge, and Dr. F. J. Malloy. **Two afternoon meetings** will be given over, one to **economic conditions** of the profession, and the other to **industrial work.** Most of the program will be given by our own men, but there are several outstanding guest speakers.

TROTZKY

Word has reached us that Trotzky pled guilty and received a six-months suspended sentence from Judge Hardy of Nogales, with the warning that if he engaged further in the practice of medicine in Arizona without a license he would go to jail for six months.

This forcibly calls attention to the weakness of our medical practice act. It should have "teeth" put into it, and perhaps our legislative committee can see that something is done in this connection.

If Trotzky can be believed, he has left for California.

DEATH OF DR. MILLIGAN

Just as we were going to press we received word from Dr. L. B. Cohenour, Secretary of the New Mexico Medical Society and Associate Editor of Southwestern Medicine, that Dr. C. F. Milligan, President of the New Mexico Medical Society, died suddenly on February second. More detail will be given at a later date.

MOTION PICTURE PROGRAMS

Davis and Geck, Inc., have a number of motion pictures of surgical operations which they are glad to supply, free of charge, to various organizations who will be careful of the films and guarantee their safe return.

DALLAS CLINICAL CONFERENCE

The Dallas Southern Clinical Society holds its Seventh Annual Clinical Conference this year at the Baker Hotel, March 18th-22nd. Fourteen excellent guest speakers will cover various specialties in medicine.

NEW MEXICO MEETING

The New Mexico State Medical Society will hold the annual meeting May 22, 23 and 24th.

The American Neisserian Medical Society was founded on June 12th, 1934. It is dedicated to the promotion of knowledge in all that relates to the gonococcus and gonococcal infections, that there may be attained improvement in the management of gonorrhea and a reduction in its prevalence. There are 115 charter members and the officers are: Dr. Edward L. Keyes, New York, Honorary President; Dr. J. Dellinger Barney, Boston, President; Dr. P. S. Pelouze, Philadelphia, Vice-President; Dr. A. L. Clark, Oklahoma City; Dr. Walter Clarke, New York; Dr. R. D. Herrold, Chicago; Dr. N. A. Nelson, Boston; Dr. Oscar F. Cox, Jr., Boston, Secretary-Treasurer.—Executive Committee.

The society plans to carry out the following program: The scrutiny of the management of gonorrhea in both male and female; clinical and laboratory research in the diagnosis, medical and social pathology, and the treatment of gonorrhea; dissemination among the medical profession and the public of authoritative information concerning gonorrhea.

Membership is limited to: Residents of the United States or its territories, Canada or Mexico; graduates of a medical school recognized by the American Medical Association; those who are engaged in some phase of the management of gonorrhea.

Invitation to membership is extended to all qualified physicians who desire to work for improvement in the management of gonorrhea. Application blanks can be obtained from Oscar F. Cox, Jr., M. D., Secretary, 475 Commonwealth Ave., Boston, Mass.

A food product is available containing sufficient vitamin D so that it is unnecessary to go to the expense of buying vitamin D preparations to supplement the diet. For, according to clinical tests, Cocomalt, when taken three times a day, will supply children with enough vitamin D. Cocomalt contains not less than 30 Steenbock (81 U.S.P. revised) units per ounce—the amount used to make one drink. Cocomalt is licensed by the Wisconsin University Alumni Research Foundation. Ordinarily vitamin D preparations are unpalatable, but in this form its existence is unsuspected.

In addition to its importance as a vitamin D supplement to the diet, Cocomalt is helpful where milk is a problem. For Cocomalt, which is designed to be mixed with milk, is truly delicious. But a word of warning must be sounded concerning products that appear to be similar to Cocomalt. For the most part these preparations are mere flavorings—a mixture of chocolate and sugar. Cocomalt, however, is a product designed as a food with vitamin content. Its tempting chocolate flavor—important as it may be in making milk more palatable—is secondary to its importance as a body-building food with vitamins.

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Address_____
City_____ State_____

tion of all the accepted vitamins has been prepared by R. B. Davis Company, the makers of Cocomalt. It may be secured on request without cost by writing the company at Hoboken, New Jersey, Dept. 000.

BOOK REVIEW

THE HEART VISIBLE, A CLINICAL STUDY IN CARDIOVASCULAR ROENTGENOLOGY IN HEALTH AND DISEASE; by J. Polevski, M. D. attending Physician and Cardiologist, Newark Beth Israel Hospital. **F. A. Davis Company**, Publishers; **Philadelphia**; 1934; $5.00 net.

This is a clinical study of the normal and pathologic heart as shown on the fluoroscopic screen and by Roentgenograms. It is insufficient that the heart be viewed from a single angle; a complete survey should be made observing the surface contour from every angle so that any change in size or shape of any of the chambers can be visualized. This can be accomplished best by a series of roentgenograms and by careful use of the fluoroscope.

The findings on examination of the normal heart are first given, followed by description and illustrations of changes occuring in the "abnormal" heart. The chapters on the pericardium and great vessels are of much interest. The volume is profusely illustrated; the reproductions of roentgenograms are unusually clear; the text is concise and well arranged. H. P. M.

INFRA-RED THERAPY. — The Council on Physical Therapy reports that the generators of infra-red or thermal radiation usually consist of a concave reflector at the focus of which is a heating element. From the sources considered (electrical bulbs and resistance coils), the pentration of heat into the tissues is never great under therapeutic conditions. Therapeutic indications for the use of heat locally are chiefly in the following fields: surgery, following fractures, dislocations, sprains, cicatrices after operating procedures, arthritis when a limited influence on the joints is desired, myositis, neuritis, and circulatory disturbances of the extremities, neuralgia, chronic diseases of the nervous system, traumatic synovitis and tenosynovitis, contusions and muscle sprains, bursitis, stiff joints, chronic backache. The report of the Council on Physical Therapy contains a discussion of the treatment of these various conditions. (Jour. A.M.A., July 7, 1934, p. 27).

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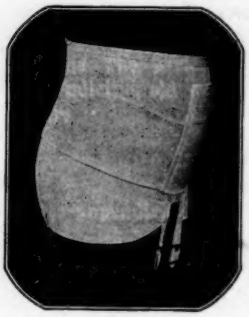

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BALTIMORE, MARYLAND

DEFINITE DIAGNOSIS IN GENERAL PRACTICE; by W. L. Kitchen, M. D.; W. B. Saunders & Co., Phil.

Kitchen's "Definite Diagnosis in General Practice" is not only unique in its arrangement, but is practical in its application.

While the convenience of its tabulated form might lead the superficial and unwary to jump at diagnostic conclusions, these same features will direct the deeper student along definite lines of study in the individual case; it will stimulate his observation of the patient in greater detail, and will finally lead him to a high degree of diagnostic accuracy.

The volume represents a tremendous amount of thought and work, and its justification will be in the hands of those who use it as a guide to further observation and study of cases and symptoms.

R. F. P.

MEDICINE MARCHES ON, by Edward Podolsky, M. D. Harper and Brothers, Publishers, New York City; $3.50.

This book deals with the really important accomplishments of modern medicine, and what scientific medicine is doing to preserve health and to prolong life. At the present time, when so much is being said and written regarding our progress in science and the mechanical arts, it is pleasing to have so readable and accurate an account of the advances being made in the science and art of medicine. This book brings the record of medical progress up to date and also contains numerous practical suggestions and much safe information which would be of value to the general reader. It is a book which the doctor may safely recommend to his patients and to the general public.—H.P.M.

A POLIOMYELITIS VACCINE.—A vaccine that seems to possess the likelihood of efficacy in the diagnosis and treatment of poliomyelitis is at present undergoing development in the Laboratories of the Department of Health of the City of New York. Influenced by the earlier work and also by the favorable results recently obtained with antigens inactivated by germicides in the prevention of other diseases, investigators have attempted to develop a new antigen against poliomyelitis. Using extraordinary precautions, the group in charge of these investigations decided to test out antigenic properties on themselves before attempting inoculation of children with the antigen. Several members of the research group were injected with a vaccine prepared by adding formaldehyde to a suspension of material from the infected spinal cord. It is proposed, after testing the blood of those who have been inoculated to determine the extent of the immunity developed, to carry the investigations further inoculating children against this disease. The vaccine will, of course, have been established as absolutely harmless by the injection into the members of the committee and also as to its efficacy by the studies that have been made on monkeys inoculated with virus following inoculation with the vaccine. (Jour. A.M.A., July 28, 1934, p. 264).

CARBARSONE.—Carbamido-phenylarsonic acid, containing from 28.1 to 28.8 per cent of arsenic (As).—Carbarsone is proposed for the treatment of intestinal amebiasis. It is administered usually by mouth; in acute amebic dysentery or in resistant cases, retention enemas may be employed. While carbarsone is said to be less toxic than acetarsone and serious untoward effects appear to be uncommon, cutaneous disturbances and

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*"Influence of Hygroscopic Agents * on Irritation from Cigarette Smoke."*

—Proc. Soc. Exp. Biol. and Med., 1934, **32**, 241-243.

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* "Pharmacology of Inflammation: III. Influence of Hygroscopic Agents on Irritation from Cigarette Smoke," as reprinted from Proc. Soc. Exp. Biol. and Med., 1934, **32**, 241-243. ☐

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other reactions common to arsenic compounds have been observed. While visual disturbances appear to be quite rare, the possibility of their occurrence should be kept in mind. Excretion of the arsenic is relatively slow; suitable rest periods must therefore be interposed in the treatment to prevent cumulative effects. In view of the frequency of persistent infection in the absence of marked symptoms, adequate therapy includes reexaminations and repetitions of courses of treatment. The usual oral dosage for adults is 0.25 gm. twice a day for ten days. As retention enemas, for adults, 2 gm. dissolved in 200 cc. of warm 2 per cent sodium bicarbonate solution may be administered following a cleansing alkaline enema every other night for a maximum of five doses, if necessary. Because of the large dosage employed oral administration should be interrupted during this interval. Carbarsone is supplied in vials containing 2 Gm. and in pulvules (capsules) containing 0.25 Gm. The name is trademarked but the firm disclaims proprietary rights. Eli Lilly & Company, Indianapolis. (Jour. A.M.A., July 28, 1934, p. 259).

Along with its announcement of the acceptance of carbarsone for inclusion in New and Nonoffi-cial Remedies, the Council on Pharmacy and Chemistry issues a report reviewing much of the clinical work with Carbarsone. The Council's report concludes: It appears that carbarsone is a valuable addition to the anti-amebic armamentarium. It must be considered, however, that not a few patients are resistant to this agent as well as to other amebicidali drugs, and that while toxic reactions appear to be uncommon, a few serious accidents have occurred after administration of the usual therapeutic doses of carbasone. The individual susceptibility to arsenic compounds of each patient must be evaluated and evidences of toxic manifestations must be watched for carefully, both during the period of therapy and, in view of the slow excretion of the administered arsenic, for a reasonable time afterward. (Jour. A.M.A., July 28, 1934, p. 258).

HUMAN ANATOMY, DOUBLE DISSECTION METHOD; by Dudley J. Morton, Associate Professor of Anatomy College of Physicians and Surgeons Columbia University; New York, Morningside Heights; Columbia University Press; 1934; $6.00 net.

There has been a tremendous increase in recent years in medical knowledge with a constant demand on the curricular time of the medical students. This has made necessary readjustment in teaching schedules. A conspicuous change has been a reduction in time allotted to gross anatomy. Formerly two years of the student's time was given to this subject, whereas now it is crowded into one year.

At the College of Physicians and Surgeons of Columbia University, all students do two dissections of the entire body; the first is restricted to the larger structures and visceral organs, and the second to the vascular and nervous system with a review of the larger structures.

The students are grouped in pairs, four to a table, the work being alternated between dissection and study in order that neither time nor material will be sacrificed. Lectures are coordinated with laboratory assignments.

In his first dissection he is taught not to become fascinated by too much detail.

There are two volumes in Morton's Anatomy; the first covers the gross structures. The arrangement is as a notebook; along with the text the student records his findings in an arranged place. Into various outline drawings he places the organs, muscles, etc., as he finds them. Volume two is patterned after one and deals with minute structures. It also has outline drawings into which the student draws the detail. When he has completed the course he has two books on anatomy largely his own work.

Since the writer of a medical paper or book practically always gets more out of the writing of it than the hearers or readers ever get from it, it would seem that this system of teaching anatomy is ideal.

THE CRIPPLED AND THE DISABLED; REHABILITATION OF THE PHYSICALLY HANDICAPPED IN THE UNITED STATES; by Henry H. Kessler; New York, Morningside Heights; Columbia University Press, 1935.

The problems of the crippled and disabled are analyzed. The specific and general legislation vocational adjustments offered diseased persons is given. The author also has studied legislation which has been inaugurated in other nations for the purpose of rehabilitating the disabled.

Formerly there were great social barriers to the

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rehabilitation of the disabled; one was psychosocial, and the other economical, prejudice. The prejudice rests on superstition and false concepts of the capacity of the crippled to perform work. Society is gradually losing these restrictions through legislation; the difference between the normal and the disabled seems to be lessening.

Those who have to do with the problems of the disabled, especially, will appreciate this volume.

It contains 265 pages of text with three appendices: No. I gives the Compensation Provisions for second major injuries in those states not having second-injury funds. Appendix II presents the summary of vocational rehabilitation legislation by states. Appendix III gives the legislation for the blind in the various states. There are 18 pages of bibliography. The index seem to be adequate. The publishers have done an excellent piece of work as well as has the author.

THE 1934 YEAR BOOK OF GENERAL MEDICINE; by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., S. D., F. R. S. P. (Hon.) Edin., William B. Castle, M.D., A.M., William D. Stroud, M.D., George B. Eusterman, M.D.; first edition; 843 pages; The Year Book Publishers, Inc.; 304 South Dearborn Street, Chicago, Ill.

One who has not made use of the Year Book can not appreciate what a handy volume it is. This year's book on general medicine is no exception to the rule. If one happens to be interested in granulocytopenia, he may turn to the index and find a discussion beginning on page 406 under the name malignant neutropenia. The editors have written a short editorial upon this disease; following this comes the reviews of articles by Dr. Regena C. Beck, Thompson and Jackson, Stephens and Lawrence, Madison and Squire, etc. There are reviews of at least 13 of the more important articles of the year upon this subject. If one wishes information on infectious mononucleosis he will find it beginning on page 420. There are six pages of carefully culled information of this year's literature on this disease; or suppose one is particularly interested in electrocardiography; turning to page 594 he will get in the next five or six pages the important new developments in this line; it may be undulant, typhus, tularemia, rheumatism, scarlet, poliomyelitis, meningitis, malaria or other diseases which one wishes the latest information upon; it is found in this volume. The book is highly practical.

PAN AMERICAN MEDICAL ASSOCIATION'S CRUISE FOR 1935.

The S. S. "Columbia," the largest American cruise ship afloat—40,000 tons, with three swimming pools and a sand beach on deck—has been selected by the officials of the Pan American Medical Association for the Cruise. The ship will sail from New York on July the 18th, returning to New York on August 28th. The itinerary will be as follows: New York, Havana, Curacao, five days at Rio de Janeiro (where a scientific congress will be held), three days at Santos (for attending a scientific convention at Sao Paulo), Trinidad, Santo Domingo, Kingston (Jamaica), Havana and New York.

Accommodations per person are from $450.00 up, which is as low as $11.00 a day.

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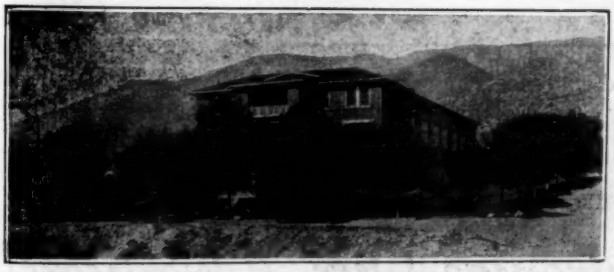
The Section on Radiology is one of the live divisions of the Association. Its President is Dr. Frederick W. O'Brien, 465 Beacon Street, Boston, Mass., who invites you to contribute an article on Radiology. Please say that you will go, and send in your title within thirty days, if possible.

For further particulars of the Cruise, write to tre Director-General, Dr. Joseph J. Eller, 745 Fifth Avenue, New York, N. Y.

ALBERT SOILAND,
Chairman Executive Committee
Section of Radiology.



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